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ABSTRACT

This account of the Educational Resources Information Center (ERIC) provides information on its background and origin, and traces the development of the system from initial planning in 1962 through mid-1979. Although this is essentially an overview of the growth of the system, some of the more complex aspects of the ERIC story are included in the historical narrative, as well as critical comments, judgments, and evaluations designed to provide a more complete understanding of the factors involved in various events. Individual chapters deal with the background, beginning operations (1962-1965), building the ERIC system (1965-1966), ERIC's operation as a system (1966-1969), evaluation and reorganization of the system (1969-1972), building the thesaurus and improving the vocabulary, information processing procedures and the system components involved, and information services offered by the system. Footnotes for each chapter include references, and an ERIC chronology and indexes by personal name and subject are provided. (MER)

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ERIC - THE FIRST 15 YEARS

A History of
The Educational Resources
Information Center

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IR009223

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"Of making many books there is no end, and much study is a weariness of the flesh."

...*Ecclesiastes, Chapter 12, Verse 12*

"They showed me a catalogue of their writings, which already runs to a roomful of scrolls. It is not complete and never will be, for dissertations are produced more quickly than they can be listed, since the cataloguers are themselves writing dissertations on the proper principles of listing dissertations."

...*Ramayana, circa 1175-1250 A.D.*

"One of the diseases of this age is the multiplicity of books; they doth so overcharge the world that it is not able to digest the abundance of idle matter that is everyday hatched and brought forth into the world."

...*Barnaby Rich, 1613*

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People who were familiar with ERIC's background thought it an interesting story. I thought it was worthwhile to record it. Chuck Hoover was aware of my interest and during the summer of 1978, shortly prior to my retirement from Civil Service, he made the necessary arrangements for me to begin the task in November of that year.

I had already started to collect background materials about 1975. Also, Charles Missar, associated first directly and then peripherally with ERIC, had accumulated boxfulls of early ERIC documentation which he generously donated to the cause. I am grateful for Missar's penchant for documentary preservation, for without those materials the early portion of the narrative would have proven far more difficult. Certainly less complete. In addition, several long conversations with Harold Haswell, ERIC's first chief, helped considerably to give orientation and understanding about early ERIC. Then, too, several ERIC staff members gave their assistance: Robert Chesley, Frank Smardak, Catherine Welsh, Patricia Coulter, Mildred Thorne, Frank Bryars, and James Prevel. Their frequent words of encouragement were also appreciated.

Before he died, Tom Clemens gave me the benefit of his long experience and involvement with ERIC. And Lee Burchinal reviewed the completed manuscript and offered several valuable comments. Additional information was obtained from Frank Schick, Allen Kent, Douglas Berninger, and Winslow Hatch.

Several clearinghouse people provided me with documentary materials along with comments: Philip Piele, Arthur Cohen, Bonnie Sanchez, John Waters, Eleanor Horne, Jonathan Fife, Marilyn Shorr, Karl Massanari, and Everett Edington. Special debts are owed to Don Erickson, who loaned me his entire clearinghouse files on ERIC, and to Carroll Hall and Betty Rose Rios, who not only read and commented on the draft manuscript, but sent me copies of many documents in their files.

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...Del Trester

FOREWORD

This account of ERIC has a simple purpose: To provide the fast growing number of ERIC participants---as well as interested spectators---background information about how ERIC originated and how it fared during the early and formative years of its existence.

However, a straightforward historical narrative can be too bare, too bland. Therefore, included are some of the more complex aspects of the ERIC story as well as critical comments, judgments, and evaluations which are offered in the spirit of providing a more complete understanding of the origin, early growth, and present status of the Educational Resources Information Center.

The reader should be aware of three caveats:

This is not an "administrative" history---not an inch-by-inch, day-by-day narrative which is intended to replace all files, all reports, all studies, all written items about ERIC. Such an account would run several thousand pages and not one person would be interested in reading it.

Neither is it a "company" history. It is true that Central ERIC did support its writing and publication; however, Central ERIC management gave the author a free hand in the selection of material, mode of coverage, and expression of opinion. There was no censorship of any kind.

It should be clearly understood that the author worked in Central ERIC for over 10 years. Therefore, he participated in many of the events, decisions, and actions described in the narrative. He has studiously attempted to be objective and unbiased in both description and commentary. In this, at least, he hopes he has been successful.

...Del Trester
Columbia, Maryland
July, 1979

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CAVEAT LECTEUR

* OE will be used for U.S. Office of Education throughout this narrative.

** For an account of the early history of OE, see Harry Kursh, *The United States Office of Education*. Chilton Company, 1965.

*** NIE will be used for National Institute of Education throughout this narrative.

**** ERIC will be used for Educational Resources Information Center throughout this narrative.

CHAPTER 1. BACKGROUND TO MID-1962

The Scene

Few people realize that the Office of Education (OE)* is well over 100 years old. In the overall American bureaucracy it is a middle-aged government organization, not among the oldest or one of the newest. OE was created as the "Department of Education" in 1867 and during the early years of its existence suffered a checkered career largely because some legislators feared it might develop into an octopus that would stifle the rights of state and local governments to control their own educational destinies. No one wanted a national "Ministry of Education" such as existed in many other countries.

Congress quickly recognized that an independent educational department --- even one lacking membership on the President's cabinet --- left the door open for the machinations of a strong-willed educational administrator who might build a power structure for Federal control. So Congress immediately slammed the door. In 1868 the legislators changed the name to the "Office of Education" and placed it under the jurisdiction of the Department of Interior. There OE languished until 1939 when Congress transferred it to the Federal Security Agency. This latter agency underwent an extensive reorganization in 1953 and became the large and diverse Department of Health, Education, and Welfare.**

Another significant transformation occurred as a result of the Education Amendments of 1972 which created the Education Division in the Department of Health, Education, and Welfare. This division, headed by the Assistant Secretary for Education, was composed of two entities: the Office of Education (OE) and the National Institute of Education (NIE)***. Supporters of this change hoped the Institute would consolidate and give greater status and impetus to national educational research and development, establish a solid base for solving educational problems, and advance the practice of education in general.

ERIC**** originated in OE to fill a basic need of OE administrators and the researchers they funded: control over the educational literature. ERIC was

For key to asterisks, please see Caveat Lecteur in the front matter.

considered a support function or adjunct to the research community. Therefore, when most of the OE research efforts were shifted to NIE, ERIC went along.

The Assistant Secretary for Education, and some elements of OE, were located in a modern glass-limestone structure on Independence Avenue, between 6th and 7th Streets in Southwest Washington, D.C. This was where ERIC was born. Like many government organizations, however, NIE spilled into the myriad of nondescript office buildings scattered throughout Washington. The small NIE staff occupied a couple of buildings in Southwest Washington for a short time and in 1973 transferred to two buildings diagonally across from each other at the downtown intersection of 19th and M Streets, N.W.

During the latter 1970's, there was increasing pressure to recreate the Department of Education. Leading educators felt, in general, that education suffered from lack of status and inadequate budgets in the huge HEW complex, and they gained support for their position from President Jimmy Carter. Therefore, in September 1979 Congress passed legislation for creating a Department of Education which Carter signed into law on October 17.

Preliminary

One might assume that federal information systems are organized in response to a great hue and cry from information-starved users in this or that subject area. One can visualize a developer, a Ph.D. candidate, or a professor desperately needing widely scattered information gathered into one convenient, easily accessible data base. One can imagine these people banded together at their annual professional association meeting, vociferously demanding that the Federal Government satisfy their needs; the next step being to form a committee which would labor for a year or two, prepare an action plan, and send a delegation to the appropriate Federal agency to plead for adoption of their scheme. That is the way it happens, right? No, not true.

That scenario is very logical and very desirable, but has never been performed. Only on rare occasions --- as for the National Referral Center in the Library of Congress --- has the basic idea for an information system come from the grass roots of the user population. In that specific case one individual, Uriel Schoenbach, made a seminal suggestion on which the National Science Foundation's Office of Science Information took development and operational action. Usually, however, federal information systems originate totally within the federal structure; in fact, the originators are likely to be those who know the subject area, are familiar with libraries and information systems, and are intimately acquainted with the federal agency's personalities and organizational structure. Such people build federal information systems. So it was with ERIC.

The Columbia University Study

Although it dealt primarily with the subject of educational media research, a Columbia University study played a significant role in ERIC's background. During 1957 and 1958, OE personnel were confronted with a substantial increase in the number of documents resulting from research in the areas of education media---print, television, radio, films, models, and other items considered to be audiovisual. Such was the flow of information, that staff members became uneasy about how to make it available to a wide range of persons in OE and the educational community. Even the administrative and project officers in the Educational Media Branch were becoming desperate to gain access to completed research reports so as to evaluate and avoid duplication of research proposals being submitted under Title VII, Part A, of the National Defense Education Act[1].

Walter Stone, a consultant to the Media Branch and later its chief, as well as Roy Hall, the Assistant Commissioner for Research, were both keenly aware of the need to take some action to control the media research literature. Therefore, in 1959 the Media Branch initiated a *Feasibility Study Regarding the Establishment of an Educational Media Research Information Service*, with Maurice F. Tauber and Oliver L. Lilley, of Columbia University, as the two principal investigators[2].

The study was an ambitious one which examined the existing methods of disseminating the literature, the systems of classification used to organize research information, and the techniques users employed to gather information in the media field. The final report appeared on May 30, 1960 with Tauber and Lilley's strong recommendation that a media information service be set up as part of OE. They thought the service should be organized as a section in the Educational Media Branch, and should consist of a unit manager, a technical classifier-indexer, an editorial assistant, a secretarial assistant, and two clerks. The budget for the first year's operation---including personnel costs, equipment, supplies, printing, distribution, and dissemination---was estimated at $89,275[3].

During their investigative work, Tauber and Lilley encountered the sentiment that educational information problems were by no means confined to the subject of media; yet they felt that *"...an effort to encompass the whole body of research in education and the communication arts at this time would present so many difficulties in developing the Service, that the success of the operation might well be defeated"*[4]. The Media Research Information Service was, therefore, *"the first of two steps leading toward a coordinated information service that in time will embrace all educational research and research in other disciplines that have implications for educational theory and practice"*[5].

Thomas D. Clemens, who had joined the Media Branch in early 1960 and had been the project officer for the Columbia study, read the final report with mixed emotions. He felt that Tauber and Lilley had done a thorough job in contacting the user populations in the audiovisual field, had marshalled the facts to justify establishment of an information service, and had adequately outlined the steps to achieve a viable information activity. But Clemens did not agree with the somewhat cautious approach to the broader information problem. He talked with Dave Clark, who was the Acting Director of the Cooperative Research Branch, and stated that any information service created in OE should cover the broad spectrum of education. Clark agreed[6]. But with this more encompassing approach, there were numerous questions to answer, more red tape to unravel before decisions could be reached. So Clemens and Clark agreed to form an in-house committee to launch an attack on the problem areas.

The Divisional Committee on Research Information Services

The Divisional Committee which Clark and Clemens organized was composed of members from each Branch of the Division of Statistics and Research Services:

NAME	BRANCH
Thomas Clemens Chairman	Educational Media Branch
Howard Hjelm	Cooperative Research Branch
Robert Beezer	Alternate
Louis Conger	Educational Statistics Branch
Frank Schick	Library Services Branch

Clemens and his committee met approximately once every two weeks during the latter part of 1960. Activities were by no means confined to an exchange of theoretical ideas among its own members; instead they sought experience and advice from all the most prominent people involved with information systems---although, of course, most of those systems centered around scientific and technical subject areas. Committee members visited were:

NAME	ORGANIZATION
Burton W. Adkinson	National Science Foundation
G.R. Gottschalk	Center for Applied Research in Education, Inc.
Allen Kent	Center for Documentation and Communication Research, Western Reserve University
John Sanford	National Security Agency
Mary Stevens	National Bureau of Standards
Mortimer Taube	Documentation, Inc.

In addition, some of the committee visited several organizations to talk with information systems people and witness demonstrations of information activities:

- Bio-Science Information Exchange
  Washington, D.C.
- CATE Program
  Air Research and Development Command
  Andrews Air Force Base, Maryland
- Center for Documentation and Communication Research
  Western Reserve University
- Division of Academic Research and Services
  Pennsylvania State University
- Education Research Information Service
  Texas Education Agency
- Electronic Retrieval of Law Demonstration
  University of Pittsburgh

The committee had done its homework.

In September 1960, the Divisional Committee prepared a long memorandum for Roy M. Hall, the OE Assistant Commissioner for Research, the subject of which was: "Recommendations Relative to Research Information Services Within the Office of Education". The report pointed out that each of Hall's branches was already engaged in some form of information service. The Cooperative Research Branch along with the Library Services Branch had pioneered in making research reports available to libraries throughout the country using the resources of the Documents Expediting Service in the Library of Congress. The Library Branch also had completed a bibliography of doctoral dissertations in the field of Library Science covering the past 35 years. The Statistics Branch regularly conducted a biennial survey of educational statistics and operated a reference service as well. The Media Branch abstracted and reported on its own projects and had supported the study by Columbia University[7].

The legal authority to establish an OE information service was undeniable. The 1867 legislation which created the Office of Education contained a clear mandate---specifically that of "...*diffusing such information respecting the organization and management of schools and school systems and methods of teaching as shall aid the people of the United States in the establishment and maintenance of efficient school systems, and otherwise promote the cause of education throughout the country*"[8]. Given such sweeping legal authority, Clemens and his committee members agreed that "...*logic would appear to indicate that there is need for a central point in the United States where all educational research information is available. Since the Office of Education is already looked as to as a national center for educational information, it is eminently suited to provide such a service*." [9]

In general, the committee believed that the proposed service should provide abstracts, indexes, bibliographies, and reference services, both periodically and upon individual request. Three basically important classes of information should be collected:

1. research, both completed and in progress;
2. statistics and surveys; and
3. legal statutes, decisions, and opinions related to education.

Service should be free to OE and other government personnel, educational researchers, libraries, educational institutions, and professional educators.

But committee members had some constraints about proceeding too swiftly. They recommended that the information service should first comprise the abstracting, indexing, and disseminating of current research related only to the subjects of media, cooperative research projects, and library services. When this initial segment had been adequately tested, then information center activities could be extended to all significant educational research. The next step would include all Government-sponsored research in education. Finally, all education research sponsored by private institutions, foundations, and associations, domestically as well as in foreign countries, would be covered. The inclusion of statistical information and legal references should proceed as rapidly as possible[10].

Along with all the above background information there was an important attachment to the memo---a preliminary proposal from Allen Kent of Western Reserve University's Center for Documentation and Communication Research. Kent had offered to study the concept of an information system and provide thesaural, indexing, abstracting, and other operational guidelines. The basis for this proposal lay with the hurried contacts the committee had made during the summer of 1960. In fact, Clemens recalled that Kent had quickly drafted the proposal while aboard a flight to Puerto Rico[11]. In the early sixties there existed a practice of informal discussions and negotiations with prospective contractors. In those days when an OE official wanted to contract for some special job, he or she usually would informally ferret out those people who could do the work and then talk with them to see if they were interested. The one that appeared most acceptable and had the best "track record" was then asked to submit an "unsolicited" proposal which would be processed through the agency's contract office. Some such procedure was used in this instance.

Certainly the Western Reserve Center was competent to handle such an effort. Under Jesse Shera and Allen Kent the center had been active for five or six years (the principals over a longer time period) in the development of new tools and techniques for increasing the effectiveness of technical information dissemination. The Center had already developed operational machine searching services in the areas of metallurgy, physics, inorganic chemistry, mechanical engineering, and geology. Kent's proposal contained a long shopping list of tasks which came under the general heading of system design, alternative methods of indexing and abstracting, testing of pilot information service systems, and a variety of techniques to sample terminology control. The proposal was clear, concise, and complete[12].

Approval and paperwork procedures bogged down the project for a few months, but the study contract got off the ground on April 3, 1961. The Clemens Committee continued to meet during the course of the contract, working with Kent and the other members of the research team: Pamela Reeves, J.J. Goldwyn, and Jessica Melton[13]. The official OE project officers were

Tom Clemens and Howard Hjelm, inasmuch as their Branches had contributed the money for the study; however, all committee members were involved in monitoring the progress of Western Reserve's efforts.

At one point when the study was running its course Frank Schick and John Lorenz were discussing something they were writing and they were commiserating about having to continually write out such long phrases as "research information services," and "a center for OE research information services," and the like. So they started playing with acronyms and came up with "ERIC"---The Educational Research Information Center* Although Schick was not certain as to the exact christening date, he recalled that it happened sometime during 1961. The acronym caught on and Kent and his colleagues picked it up and used it during the project as well as in the final report.[13]

The Western Reserve Study

Following 14 months of intensive work, the Western Reserve study appeared in June 1962 under the title: *The Library of Tomorrow---Today*. Kent's basic approach called for organization of a pilot information center which allowed for detailed analysis and selective dissemination of research documents based on individual request. The contractor chose about 2,000 media research documents and 2,000 cooperative research program documents which were indexed and abstracted. These served as a data base for answering questions to test the system.[14] Different indexing and abstracting schemes were used to find the most valid and effective procedure. Considerable experimentation was conducted with telegraphic abstracts and semantic codes[15]---somewhat cryptic and complicated systems which OE planners fortunately did not adopt.

Kent and company were acutely conscious of the overriding interests of the user population. This attitude was explicit in their basic conceptualization of the system: that constant consideration always must be given to the needs of the user, including the *scope* and *depth* of user interest. Of equal importance, the study warned, was the establishment of flexibility to reflect changes in the characteristics of the material, either in context or terminology.[16]

---

*Later to be the Educational Resources Information Center.

After 14 months of effort, Kent stated that the development of the system was not complete. *"However,"* he said, *"we are confident that the system is ready for beginning operation, as long as sufficient leeway is provided to permit adjustment to various aspects of the system based on the pressures of operation."*[17]

The study suggested a step-by-step adoption process. It was considered reasonable that the area of media research could be covered rather quickly and be ready for total system operation by 1964. The larger area of educational research would take somewhat longer. Some research and development work should precede an operational system involving the totality of educational subject areas.[18]

The services that ERIC should offer were now clearly in mind. ERIC could provide files for local exploitation in the form of computer tapes, copies of source documents, abstracts, bibliographies, and "dictionaries of encoded terminology."[19] As a primary information agency, ERIC would provide user information in the form of source documents, abstracts, and bibliographies. Thus, ERIC should be able to satisfy the full spectrum of information needs. *"It will be able to furnish information to individuals engaged in pure research. And it will also be able to furnish information to individuals who are charged with the task of establishing and presenting guidelines for application in teaching and administration."*[20] Kent hoped for an open-door policy on services: *"ERIC's services would be available to individuals in government, academic institutions, educational agencies, and industry, wherever there is a need for information from the vast and growing literature of educational research."*[21]

Clearinghouse of Studies on Higher Education

Thus far, ERIC's background has been described as a logical sequence of events: the formative idea, the study contracts, the OE in-house monitoring and discussion, and the recommendations to set up ERIC as an organizational entity. There was, however, a concurrent information activity going on in the Clearinghouse of Studies on Higher Education which might have had some influence on ERIC. There is some dispute as to how strong that influence was or, in fact, if there were any influence at all. Yet, certainly the Clearinghouse was antecedent to ERIC; certainly it performed functions similar to those slated for ERIC; and certainly some of the persons involved with the Clearinghouse became involved with ERIC.

Back in July 1957 the President's Committee on Education Beyond the High School had recommended that OE assign *"the highest priority to increase substantially the effectiveness of its fact finding and reporting services... with the aim of supplying the Nation with a continuing flow of reliable and up-to-date information about conditions and trends in education beyond the high school."*[22] To conform with this mandate, OE's Division of Higher Education established the Clearinghouse in February 1958, with Winslow R. Hatch as Director.[23]

Hatch felt that *"the purpose of the Clearinghouse, in addition to collecting and circulating information on 'institutional' research (studies conducted or new programs embarked upon by an institution or by an agency on its behalf), is to provide this information in such ways as to represent fairly the research done and the subjects investigated."*[24] He hoped that with this information in hand, educators could spot trends of educational interests before they were reflected in programs and practices. Secondly---and here he expressed the classical justification for an information system---he believed the Clearinghouse would help eliminate duplication of effort.[25]

To gain access to higher education documents, Hatch resorted to a bold and shrewd acquisitions program: he contacted the presidents of the 1,886 institutions listed in the *Education Directory* and asked them to appoint institutional representatives who would be responsible for collecting documents and sending them to the Clearinghouse.[26] And it paid off. The resultant bibliographic control publication was called the *Reporter*, and the first issue published in March 1959 contained about 1,500 references. Subsequent editions, however, were more in the range of from 200 to 600 items.

At first the *Reporter* was a simple list of documents---a straightforward bibliography with items listed under 24 subject categories. Later the entries contained an annotation which later still grew to a full-fledged abstract. Between 1959 and 1965 the *Reporter* appeared at irregular intervals and then died at the tender age of seven issues. Hatch was its editor for the first four issues and then Harold A. Haswell, who joined the Clearinghouse in 1960 as Director of the Programs Branch, became editor of the *Reporter* for the last three issues. The last *Reporter*, of course, was published after ERIC had become operational with Haswell as its head. By then the responsibility for control of all educational research literature had shifted to ERIC.

Persons using the *Reporter* were advised not to seek copies of referenced documents from OE; instead, they were asked to contact the issuing institutions for copies---some free, some at a price. However, the *Reporter* editors did invite researchers to come to the Clearinghouse offices where copies of all documents were on file. This invitation, of course, created two additional information functions: a reference service and a file searching activity. Neither was sophisticated. But the document collection reached such proportions that the Clearinghouse staff began to think about setting up an optical coincidence card searching system and a coordinate indexing technique, but this action was forestalled when the ERIC system absorbed responsibility for the documents.[28]

CHAPTER II. ERIC BEGINS OPERATIONS - 1962-1965

The Western Reserve study, published in June 1962, was unquestionably accepted as the official design for ERIC: there was no dispute with the basic philosophy, the operational characteristics, or the time schedule. Everyone agreed that ERIC operations in OE should begin in 1964. The Educational Media Branch continued to support Western Reserve in its pilot operation dealing with document collection, indexing, abstracting, evaluation of experimental searches, and comparison with other systems.

But some OE people were impatient to get ERIC off the ground. Frank Schick recalled that several times during 1963 Ralph C.M. Flynt (who occupied several positions in the fluid and fluctuating OE organization) to arrange for an organizational home for ERIC; however, he was unsuccessful[1]. Meanwhile, Haswell, Director of the Higher Education Programs Branch, read the Western Reserve study and became very enthusiastic about ERIC. Sometime during the early part of 1964 (in March or April) Haswell talked to Flynt about ERIC, urged him to make another attempt to get ERIC on the OE organization chart, and volunteered to become the head of ERIC. [2] The timing was right. On April 20, 1964, OE Commissioner Francis Keppel announced a reorganization of the Bureau of Educational Research and Development which was to be effective May 15, 1964. The new bureau was to be headed by Associate Commissioner Flynt and one of the five bureau segments was the Division of Educational Research, the head of which was Francis A. J. Ianni[3]. ERIC became a branch of that division.

But on May 15, when ERIC opened its doors, it really was an office without funds and an office without a program---despite all the careful planning[4]. Kent had proposed an annual ERIC budget of $100,000 to $150,000 for the first two or three years[5]. To follow the Western Reserve design would require a considerable outlay of funds to buy the automatic data processing equipment necessary for an in-house activity; also, of course, specialists were needed to operate that equipment. On the other hand, to contract for such services would require even more money. Haswell had a problem.

Lacking sufficient resources to indulge in a freewheeling operation, Haswell and his staff restated ERIC's goals in a somewhat more cautious and generalized framework:

> *"ERIC exists to collect research information from the schools and colleges of the Nation and from the educational community generally and it must also disseminate this information. This responsibility involves (1) the location, acquisition and evaluation of source materials; (2) the indexing, abstracting, reporting and storing of these materials; (3) the retrieval of information upon request; (4) the dissemination of that information in the form of references, annotated bibliographies, abstracts or reports; (5) the preparation of alerting publications and trend studies; and (6) the rendering of technical and consultative services"*[6].

This was an innocent and perfunctory statement of ERIC's mission except for one item: "trend studies." The insertion of this phrase into a list of ERIC duties immediately changed the concept of ERIC from an information center to an information *analysis* center. This idea had not appeared in Western Reserve's *The Library of Tomorrow---Today*. The study had referred to "current awareness" bulletins, but had described these as collections of abstracts on various subjects---not narrative treatments which analyzed various facets of research. The reference to trend studies no doubt was inspired through the experiences of the Clearinghouse of Studies on Higher Education which had published an entire series of trend studies of the literature or state-of-the-art studies which examined this or that problem or new development in higher education. Specifically the new mission statement may have sprung from a suggestion which Alice L. Richards, a research assistant in the Clearinghouse, had made in a memorandum dated July 20, 1964: *"It occurs to me that ERIC might profit by the sponsoring of developmental programs in which the grantee would exhaustively search for studies in the area specified by contract, and develop abstracts (in depth) and trend studies, publishing both the abstracts and trend studies"* [7].

Richards' brief statement, of course, was actually a short description of the subsequent ERIC information analysis program which really did not flourish until after the organization of the ERIC clearinghouse structure in 1966.

*Accomplishments During FY 1965**

In July 1964, Ianni, the Director of the Division of Educational Research, asked Haswell to work on a priority activity involving projects dealing with cooperative research and educational media. All projects completed, in progress, and proposed were to be indexed and abstracted (with a "telegraphic" abstract). Also, Ianni directed the ERIC staff to prepare and maintain a dictionary of index terms for both subject areas[8]. The ERIC staff itself accomplished some of this work and quickly arranged for other portions of it to be completed through a contract with Duke University. In addition, ERIC provided information processing guidance to three of the most advanced information programs in OE: Talent Development, School Housing, and Science. These units filed with ERIC all of the research studies in ther collections which they had indexed and annotated.

As indicated previously, one of the early functions of ERIC was to continue the document collection enterprise which had been started in the Clearinghouse of Studies on Higher Education. The ERIC staff obtained additional documents from the appointed university representatives and the documents were abstracted and indexed for announcement in the seventh issue of the *Reporter*, published in March 1965. Actually, ERIC negotiated contracts totalling $30,000 with the University of Colorado and Indiana University to accomplish most of the workload associated with publication of this last *Reporter*[9].

A major problem area during the first year was the constant flood of demands on ERIC for reference and consultative services. The number of inquiries doubled those previously received in Hatch's Clearinghouse. Hatch foresaw that ERIC *"...must accelerate all its operating functions and provide machine search and rapid dissemination techniques"* if ERIC were to keep its head above water.[10]

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*For many years the Federal Government's fiscal year ran from July 1 through July 30. Thus, FY 1965 was the period from July 1, 1964 through June 30, 1965. Beginning in 1976 the fiscal year period was changed: FY 1977 was the period from October 1, 1976 through September 30, 1977.

The total ERIC staff at this time was as follows:

1	GS-15	Director
1	GS-14	Program Analyst
1	GS-13	Technical Operations Specialist
1	GS-12	Supervisor of Indexing and Replication
1	GS-11	Supervisor of Annotating and Reference
1	GS- 6	Secretary-Stenographer
1	GS- 5	Secretary-Stenographer

During a considerable portion of the year, this core staff was supplemented by part-time employees who served as indexers, annotators, and typists. ERIC was fortunate to receive the contributed time of many employees from other OE units which were interested in working with ERIC on projects of mutual interest.

Later on in FY 1965 Haswell succeeded in shaking loose some funds with which to acquire approximately $20,000 worth of basic equipment: multiple decks of Termatrex cards and readers, an automatic card punch, the rental of a microfilm camera, a microfilm reader-printer, rental of a Xerox 914 copier, and other related items. In a planning document for FY 1966 operations, the ERIC estimate was about $35,000 for more equipment and about $15,000 for service contracts. In addition, Haswell requested five additional staff members as well as $15,000 for consultant efforts. The planning package, following page after page of documentation and justification, summed up the situation in a simple statement: *"The speed with which ERIC moves to realize the potential implied in its name will be governed largely by the contract funds placed at its disposal and the adequacy of its staff."*[11]

Indexing, Retrieval---Early Decisions

Although ERIC was in an operational mode during FY 1965, its indexing system had not yet caught up---even though several years of effort had already been expended on various techniques of taxonomy for education. Thus in November 1964 ERIC still had to confess that: *"A major task is the design, maintenance and evaluation of a classification system to process information so that retrospective searches can be made."* [12] At this time it appeared to ERIC planners that the ERIC system would not be housed under one roof as a monolithic organization composed of a single organizational entity. Experience during the first six or seven months indicated that other OE elements, universities on a voluntary basis and under contract, as well as possible commercial contractors, would all be indexing and abstracting segments of the educational literature. *"A policy of decentralization and cooperation has been chosen because of the immense variety of needs and materials. To this end formats for reporting citations, index terms and abstracts will be standardized. Techniques will be specified to permit rapid reproduction and manipulation of this information by punched paper tape, by microforms or hard copy reproductions, and by standard punch cards and magnetic tape means."* [13]

The implication of all this meant that any taxonomy chosen must be so versatile that it would accommodate research literature of all types, at all levels, and in all subject matter areas. Therefore, despite the recognized hazards, Haswell and his staff decided to encourage imaginative approaches to indexing by experienced specialists in many fields rather than to accept a standardized taxonomy. They agreed that *"...a functional taxonomy will be maintained within ERIC, however, to provide a system that will be constantly evolving but nevertheless operational at any point in time. This, of course, implies both an editorial orientation towards all information entering the functional system and an analytical orientation towards the system and its products."* [14]

Up to this point, Western Reserve University scholars who worked on the research report and continued to handle a considerable amount of indexing had been deeply immersed in the semantic code indexing technique. This semantic code was constructed of *"...symbols (four-letter factors and related numbers) which (1) express the generic and/or specific concept or concepts which the English term represents; (2) relate the terms to other terms representing* *some or all of the same concepts"*[15]. This type of indexing appeared most appropriate for very specifically and highly defined literature where most of the material was rich in value. Conversely, educational literature was so diverse and diffuse as to make semantic coding extremely difficult. In addition, a semantic code operation required close cooperation between the searcher and the user. If followed that few users in the field of education would be able to use the semantic code well in their own searches.

The decision to settle on the coordinate indexing* approach was fully reviewed with the project people at Western Reserve. Also, the matter was discussed with William Harold Cowley of Stanford University as well as Douglas J. Foskett of the London Institute of Education Library---both with positive reactions. Furthermore, the coordinate indexing methodology followed the lead of a variety of Government agencies: The Armed Services Technical Information Agency, The Federal Aviation Agency, The Food and Drug Administration, and The National Institutes of Health. Because the coordinate indexing method was the approach which most closely approximated the techniques used in the six years in organizing the literature processed in the Clearinghouse of Studies on Higher Education, those ERIC staff members formerly with the Clearinghouse were familiar with the technique. The decision appeared logical.

Another October 1964 decision was made: to use the optical coincidence information retrieval technique. But the ERIC staff recognized that computer information retrieval was making great strides and was becoming more economical and widely used. So they took care to surround themselves with appropriate *"...equipment which will keep all information in machineable form so that a minimum of backtracking will be necessary as ERIC moves from one level of sophistication to the next"*[16]. Specifically, the Jonker Business Machines optical coincidence equipment was compatible with punched card equipment which could be later converted to a computer format.

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*A specific method of document indexing in which, in subsequent retrieval, combinations (that is, coordinations) of previously assigned terms are looked for.

Haswell secured the services of Frederick R. Goodman, of the University of Michigan, who he engaged in conceptualizing the future of ERIC, including indexing, equipment, retrieval, educational literature, and other subjects[17].

During October and November 1964, Goodman and Haswell specifically discussed the options of centralization and decentralization *vis a vis* ERIC. A planning document made the following reference to this topic: *"Using the contractual authority of the various units* (of OE), *ERIC will maintain a decentralized acquisition and information processing system at various locations throughout the Nation. Such centers will be chosen in consultation with individuals and professional organizations judged most competent to identify and evaluate the resources and potential of user centers"*[18]. These locations were referred to as "acquisition centers" but apparently Haswell, Goodman, and the ERIC staff did not yet fully visualize the concept of ERIC clearinghouses as they were to develop later on. But the seed had been planted.

Soon thereafter another individual appeared on the scene who quickly became deeply involved in the activities of ERIC and exerted a strong influence in subsequent ERIC developments: Lee G. Burchinal. He became Deputy Director of the Division of Educational Research in January 1965, and evidence of his strong interest in ERIC soon became apparent. Burchinal, Haswell, and Goodman frequently discussed decentralization and how they could involve and take advantage of the disperate groups of organizations which had experience and insight in the areas of educational research and information processing. It became clear to these three that people and organizations outside of OE had become aware of ERIC and were interested in becoming involved in it.

One of the leaders of this outside group was Edward G. Fremd, who was Director of the Clearinghouse, Center for Research and Development on Educational Differences, at Harvard. As early as January 1964, Fremd suggested to Haswell that they get together to discuss topics of mutual interest, and a meeting took place on February 5, together with Burchinal and Hatch. The four men discussed four general topics: terminology, indexing, storing and dissemination, and working relationships. In general the conversations centered around the possibilities and opportunities for standardizing information system operations so that all such efforts in the field of education would be compatible. They were all keenly aware that they should involve more of the non-OE community and agreed to meet again in the near future.

By the time of the next meeting they had organized themselves into a group called the "Working Committee of the Ad Hoc Committee on Clearinghouse Operations." Burchinal was the only OE representative. The others were Fremd and Rita Sussman from the Harvard Clearinghouse; Goodman, the ERIC consultant; Albert J. Harris, Director of Research, Division of Teacher Education, City University of New York; Richard Lawrence, Executive Secretary, American Association of Colleges of Teacher Education; Harry N. Rivlin, Dean of Teacher Education, City University of New York; and Doxey Wilkinson, Director, Information Retrieval Center on the Disadvantaged, Yeshiva University.

When this group met in New York on April 13, Burchinal quickly gained the impression that *"...the persons present wanted the Office of Education and ERIC to assert a strong leadership position in the areas of interest to ERIC."* 20

The meeting was significant because it not only provided Burchinal and Goodman with a forum to air their views about current ERIC progress and plans, but the stature of the people and their apparent desire for involvement required OE representatives to respond with "instant policy" and to make some adjustments in their conceptualization of ERIC. Burchinal led off with an explanation of the state of ERIC at that moment. He said that ERIC viewed itself as a contracting organization with its own information retrieval system, apart from, but receiving cooperative contributions from, contracting organizations. However, ERIC would contract with existing educational groups so as to form a "federated" network of semiautonomous clearinghouses. Such contractors would collect materials in areas of agreed upon eduation subjects; yet the decisions concerning the kinds of materials to be collected, the means of dissemination, the potential users, and the theoretical models of operation would all be left to the discretion of the contractor. The principal ERIC requirement was that such collections be handled in a manner consistent with the central ERIC operation. The contractor groups would supply ERIC with materials, lists, publications, and other information items which, in their opinion, could be advantageously utilized by their user populations, or the general public. *"ERIC, on the other hand, would attempt to coordinate exchanges of information, function as a referral center for those seeking detailed information in certain specialized areas, and constantly seek to reevaluate the impact of the clearinghouses on education."* [21]

Additional discussion led to the point where mutual responsbilities as well as individual options began to emerge. ERIC's role would consist of the following functions:

1. Maintain an information system in the general field of education. The information collection would include reports received from clearinghouses of completed research and research in progress as well as project materials of general information. ERIC would respond to all general information requests and refer specialized information needs to the subject area centers. OE arrangements for the development of self instructional materials for indexers and abstractors would be passed on to the contracting agencies.

2. Chart areas of education for possible coverage in state-of-the-art or synthesis papers, arrange for their production, and share them with the clearinghouses.

3. Index and abstract every project which OE funded and supply this information to the clearinghouses.

4. Share with the clearinghouses all information related to educational information as well as developments in information processing equipment and techniques.

The local clearinghouses would engage in the following functions:

1. Operate as a repository of recent published materials during the past 5 to 10 years in a specific area of education.

2. Collect all the best nonpublished documents in a particular field.

3. Maintain an information processing system which is compatible with that of ERIC.

4. Distribute a newsletter or circular similar to that being issued by the Clearinghouse on Urban Teacher Education.

5. Develop lists of current projects and significant developments[23].

Following the meeting, Burchinal advised Haswell that Harvard, Yeshiva, and City University of New York planned to submit proposals to ERIC for operation of clearinghouses in their respective areas of educational expertise[23]. However, these proposals were not received until December 1965, and by that time ERIC's direction had changed considerably.

Project Fingertip

On April 15, 1965, Haswell was on the campus of UCLA talking with Arthur M. Cohen (who later became an ERIC Clearinghouse director) about the availability of documentary materials on junior colleges. Their discussions were interrupted with the news that a few days previously President Lyndon Johnson had signed Public Law 89-10, the Elementary and Secondary Education Act of 1965. Haswell was already aware that the new law greatly expanded the amount of money available for research and included the first clear funding authority for activities related to the dissemination of educational information. Haswell had planned to meet with Alfred M. Potts in Alamosa, Colorado, to discuss migrant and rural educational materials; however, this side trip had to be cancelled because he knew that things would be stirring back at OE. He was right.

One or two days after Haswell got back to his office he received a summons from OE Commissioner Keppel. The Commissioner asked him to come up with a plan for quickly transmitting useful information to those educators involved with teaching disadvantaged children. This conversation took place on Thursday or Friday and Keppel wanted an operational plan with a price tag on it by the following Monday. Haswell worked throughout the weekend, presented a *modus operandi* to Keppel, and asked for $150,000. Keppel said, "You got it".

Haswell moved fast. The next day he arranged a session with a group of leaders from the educational secretariat of the National Education Association, teacher college groups, and representatives from about 25 professional educational associations---practically every important national activity involved with elementary and secondary education. Haswell asked them to identify names of educators and organizations who had worked on educational matters involving disadvantaged children. Then he and the ERIC staff called people throughout the country and asked them to draw up a list of programs with which they were familiar. A total of about 110 different programs were identified which were then encompassed in 23 projects. [24]

The ERIC staff formulated a plan of action which had 20 specific tasks, each with a tight timetable for accomplishment. They dubbed the plan Operation Fingertip. One of the initial overall efforts, of course, was to gather the documents. Other than the call for documents sent to many diverse individuals throughout the country, much of the document collection effort was concentrated in five centers: Yeshiva University, Harvard University, University of Southern California, Adams State College, and the Southern Reporting Service. Most of the indexing and abstracting workload was quickly arranged for with the Jonker Business Machines Corporation in a contract amounting to $32,750 which was signed on June 7. In addition, the company prepared two IBM card checks---one containing a citation entry for controlling a list of the documents and one for an index entry to control the vocabulary. One contract provision also called for Jonker to conduct indexing and abstracting training sessions for people in the various elements in OE who were to contribute packages of documents for the Fingertip operation. [25]

So many individual tasks depended on the smooth accomplishment of other tasks that the threat of delay for one meant a crisis for all. One problem at the outset, for example, was the procurement of microfilming services. The most obvious and expeditious contact for the microfilming activity was the Federal Clearinghouse for Scientific and Technical Information in Springfield, Virginia. However, the officials of that organization told Haswell that the pressures of their own operations precluded the extension of their capacity to serve the educational community. This decision was a great disappointment to Haswell.

It not only threatened the entire microfilming plan but because the end of Fiscal Year 1965 was at hand, he feared he could not use funds available at the moment which might not be available in the next fiscal year[26]. He made a hurried call to Edward J. Brunenkant, head of the technical information organization at the Atomic Energy Commission in Germantown, Maryland. After considerable negotiating and maneuvering Haswell and Brunenkant arranged for ERIC to "ride" an existing microfiche contract*, which the Atomic Energy Commission (AEC) had with the Microcard Corporation. [27] At the end of that day Haswell could have leaned back in his chair, breathed a sign of relief and said, "Well, just another routine crisis". The transfer of funds to the AEC in the amount of $42,619 was easily accomplished. [28]

A myriad of other Operation Fingertip details had to be worked out. For example, Burchinal and Haswell agreed that descriptions of each individual program should be a part of the overall package. Thus it was necessary to contact professional writers knowledgeable in education and hire them to write 500-word summaries of each program. Additionally, relevant research documents had to be listed on the back of each summary sheet with the documents arranged in such categories as curriculum guide materials, teachers' guides, general descriptions, tests and measurements, and so on. Such categorizations, it was decided, would be helpful to teachers in making their selection of useful documents. [29]

A blow-by-blow description of Operation Fingertip---with all the anxieties and minor interim achievements---would occupy too many pages for coverage in this account. The final results were more important.

In August 1965, ERIC was ready to send out the first batch of materials on disadvantaged students to 650 addresses. On the mailing list were 50 state boards of education, 100 of the largest cities, and one school district selected at random from each of the 500 Congressional districts. [30] ERIC made four separate mailings: August 15, 1965; October 15, 1965; January 15,

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*To "ride" a contract simply means that on occasion one Government agency will transfer funds to another Government agency for the extension or modification of an existing contract——often a service contract. This convenient "ride" obviates the necessity for going through the formal and time consuming process of initiating a new contract.

1966; and March 7, 1966. Each packet contained program descriptions with an index of the documents, another index of documents of general interest, one resume for each document, and the full text of each document on microfiche.[31] Each recipient ended up with a total of 1,746 documents; the sum total of the entire documentary effort represented the equivalent of nearly 30 million pages of material.[32]

Operation Fingertip was a success. Perhaps some detractor could point to some school which received the information and sent it to the school library or media center where it languished in the packing boxes and was never opened. But ERIC received ample evidence that the information did prove valuable. For example, a letter from Mesa, Arizona stated: *"We certainly appreciated the first packet of materials describing ongoing programs for the disadvantaged. We can use all the help available during these exciting times in education to insure the best use of funds on a local level upgrading education."*[33] Burchinal and Haswell prepared an article for *American Education* which described Fingertip. They wrote: *"As many as 50 letters a day reach the ERIC-central. Many just say thanks; others are formal requests for microfiche or hard copy. All buttress our belief that exchange of information through ERIC can be of great service in improving the quality of education throughout the Nation."*[34] In a memorandum to Henry Loomis, OE's Deputy Commissioner, Haswell referred to *"...the many letters, calls and conferences with researchers, program directors, and curriculum specialists from cities, states, and colleges, as well as the numerous inquiries for information about research reports from other OE units and Government agencies,"*[35] as a result of the first two large Fingertip mail deliveries. Clearly, although the operation had made a significant contribution to the educational world, the project had also served as a full-page ad for ERIC which publicized the organization throughout the country.

The Ink Reorganization

In mid-1965, while ERIC was just beginning to wrestle with the details of Operation Fingertip, all of OE was completely shook up with the famous---

many people thought infamous---Ink reorganization.* With no previous announcement or premature leaks, the new organizational chart suddenly appeared on July 1, 1965. A majority of the bureaus were changed, and 17 of the 25 supergrade personnel in OE were reassigned. [36] The cataclysmic result prompted one observer to write, *"The anguish can only be imagined. The ensuing, if temporary, administrative chaos was shattering. For days and weeks, people could not find each other's offices---sometimes not even their own. Telephone extensions connected appropriate parties only by coincidence."*[37]

Although the reorganization did not result in any reassignment of ERIC personnel, the branch was shifted to become a part of the new Division of Research Training and Dissemination, one of the five divisions of the Bureau of Research. Burchinal became head of the new division---first in an acting capacity and later as permanent Division Director. Earlier in his career Burchinal had been a sociologist and had spent some time outside of OE on the staff of the Vocational Rehabilitation Program. But he developed a deep and abiding interest in communication and information activities. Richard Dershimer, who knew Burchinal and followed his career, wrote that, *"Also, Burchinal had more than a little entrepreneurial-political talent. In the feverish milling about in USOE during the early ESEA days, he sensed there were new program domains available for the asking. So he convinced Ianni to let him build a dissemination program."* [38] ERIC was indeed fortunate to have a strong personality and shrewd administrator to direct its destinies. Dershimer echoed this sentiment: *"Burchinal's operating style soon became apparent. He had a sense of system and was viewed as a good manager. But most important, he charted a course of action that was direct, relatively noncontroversial, and low profile."* [39] From 1965 until he left NIE in early 1973, Burchinal labored strenuously to build ERIC and elevate it to a preeminent status among the Federal information systems: he made all the major decisions; he sold and resold ERIC to his OE and NIE superiors; and he advertised it to anyone outside the Government who gave him an audience. Largely, although not solely through his efforts with ERIC, Burchinal later was elevated to the status of OE Assistant Commissioner; in addition, his work with ERIC qualified him subsequently to assume leadership of the National Science Foundation's Office of Science Information Service, which many Washington observers regarded as the most prestigious technical information post in town at that time.

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*Dwight A. Ink, Assistant General Manager of the Atomic Energy Commission, was assigned by White House Assistant Douglass Cater to the Department of Health, Education, and Welfare to reorganize the Office of Education so as to enable it to carry out its responsibilities under Public Law 89-10.

Getting the People to Do the Work

For any program to originate, grow, or even survive in the Federal bureaucracy its leaders must constantly acquire two precious commodities: program funds and personnel. When Congress appropriates money it usually does so in somewhat large amounts to broad "areas". But the distribution of that money to specific tasks or to individual offices or branches is usually left to the discretion of those leaders who occupy an agency's upper atmosphere---in the case of OE, the associate commissioners, the bureau heads, and sometimes the division chiefs. This truism is not confined to Government circles, of course, but is descriptive of industrial or nonprofit organizations as well. Usually---but not always---the better projects and the most worthwhile procedures are the ones which receive the allotment of money and the assignment of personnel. But having won approval for one year, no program chief can rest easy; he must fight an unrelenting battle.

New and growing programs, such as ERIC, found the fiscal and personnel power plays particularly rough going, for ERIC managers had to compete with many other well established programs which were well fortified with self sustaining arguments and had their OE political fences in a constant state of repair. Fortunately, ERIC was in the right place at the right time and profited from the largess of funds which OE received to support the many facets of P.L. 89-10.

Thus, as mentioned previously, as soon as OE was authorized to receive money from the new appropriation, Keppel handed ERIC $150,000 for Project Fingertip. The assignment of additional personnel, although not immediate, soon followed. Up to this point, ERIC had a staff of seven people: four professionals and three clerical. For FY 1966 Burchinal proposed to the OE Office of Administration that ERIC be granted three permanent positions for efforts relating to Public Law 89-10 activities over and above the four slots already anticipated in the FY 1966 budget. This permanent cadre was, of course, in addition to the numerous summer employees and short-term personnel involved with Operation Fingertip.[40] A couple of people were waiting in the wings---James L. Eller and Eugene Kennedy, both of whom had received valuable information experience in the Federal Aviation Agency. After their arrival, the ERIC personnel structure, as of early July 1965, appeared thus:

TITLE	NAME
Chief of ERIC	Harold Haswell
System Coordinator	Eugene Kennedy
Information Retrieval Officer	James Eller
Research Assistant	Marianna Haberle
Research Assistant	Helen Cacioppi
Research Assistant	JoAnne Winney
Research Assistant	Mary Kinnick
Secretary	Ailsa Hicks
Secretary	Mary Wimbs
Clerk Typist	Paul Loh

[41]

All these people required another expensive and hard-to-get commodity: square footage of office space; in fact, they needed 1,625 square feet.[42] In such situations some fiendish bureaucratic law of probability dictates that the people always appear on the scene before the physical space

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*The author will not maintain a running roster of all those individuals on the ERIC staff. Many of them, however, will appear in the following pages.

is available. But not too long into the fiscal year---by November 1965, in fact---all ERIC's employees had a place to hang their hats[43].

No sooner did the FY 1966 personnel requirements appear on the horizon, however, then Haswell and Burchinal felt it was the time to strike for FY 1967 while the glow of Operation Fingertip was showing ERIC in such a favorable light. Under Burchinal's solid pro-ERIC leadership, the Division of Research Training and Dissemination had already declared the expansion of ERIC as a top priority. In a memo which Haswell wrote for Ianni to dispatch to Deputy Commissioner Loomis, the ERIC team felt that *"ERIC has now progressed in systems design and operational experience to a point where it would be possible to accelerate the implementation of 1967 plans by at least six months"*[44]. This October 1965 memo went on to draw up a list of 15 new personnel positions for ERIC. Haswell couched the boldness of his request in formal official prose: *"Authorization to proceed to recruit persons for these positions would allow for acceleration of all contemplated ERIC operations"*[45]. However, the ERIC staff never did reach the proportions contemplated in this memo. The limitations for the organization came about largely through a change in operational direction rather than a change in priorities. Once it became clear during the first half of 1966 that central processing within OE was discarded in favor of central processing at a contractor facility, the need for a large OE-based staff dwindled away.

More ERIC Philosophy and Directions

It was not a question of indecision or lack of direction, but ERIC's managers were still undecided as to how to draw the exact blueprint for the design of ERIC operations. On occasion some new design elements appeared in their presentations or in the many memos going back and forth. On other occasions some old elements appeared to be altered. Perhaps at times they engaged in the old political gambit of sending up a trial ballon to find out if anyone would take the trouble to shoot it down or see if everyone would just look and admire it.

During the latter part of 1965, in October, Burchinal gave a briefing on ERIC to a gathering of the OE administrative staff in Commissioner Keppel's conference room. Burchinal reviewed the interim progress of Operation Fingertip which illustrated that ERIC was operational. "*Although*," he stated, "*system design is still fluid.*"[46] Burchinal indicated very clearly that ERIC's document acquisition efforts currently rested on the theory that good collections on specific educational subject areas already existed at certain institutions throughout the country. *"Rather than disrupt such established depositories, ERIC proposes to contract with the curators of such collections, have them screen the documents for quality and relevance, abstract and index those judged to be of national significance, and share this portion of their collections with the ERIC system."*[47]

In fact, ERIC had three contracts with such satellites already under way. Western Reserve University had been collecting and processing documents related to educational media research. The University of Southern California was doing the same thing with literature on instructional technology. And Syracuse University had an ERIC contract to place under bibliographic control one of the world's foremost document and literature collections in the field of adult education.[48] This latter effort, for example, had been initiated back in August 1964 and was being conducted at Syracuse's Library of Continuing Education under the direction of Roger DeCrow. (He also later became an ERIC clearinghouse director.) The Syracuse staff devised a classification scheme for adult education materials, constructed a thesaurus of structured terms, and indexed a selected portion of the collection.[49]

As indicated previously, it was during this time that several satellite proposals were in the preparation stage:

Organization	Subject
Yeshiva University	Disadvantaged Youth
Harvard University	Individual Differences
City University of New York	Urban Teacher Education
University of Houston	School Housing Research

Kennedy, the ERIC system coordinator, was then discussing the possibility of establishing satellites to cover the various facets of higher education, including junior colleges. [50]

In his briefing, Burchinal went on to assert that one of ERIC's vital goals was to create a close working relationship with other research units of OE's Bureau of Research. He indicated that "*...satellite centers are contemplated in such specific programs as Vocational Education, Educational Media, Handicapped Children and Youth, the Captioned Films for the Deaf, Modern Foreign Language, the Arts and Humanities, and Comparative Education.*" Furthermore, he thought that ERIC should attempt to cooperate with State departments of education as they began to get their acts together in the information processing and retrieval business. Burchinal also believed it very desirable to involve the newly created OE regional laboratories and research and development centers. [51] The latter ideas sounded very much as if he were launching a few of those trial balloon adventures alluded to earlier.

Both Haswell and Burchinal had made earlier preliminary efforts to construct some kind of an overall ERIC mission statement but they had not been completely successful. Burchinal thought it important on this occasion to come up with something more polished.

> *"The mission of ERIC is to create an educational research documentation network linking together the universities, professional organizations and other documentation efforts of the educational community. The component units will select significant research documents for inclusion in a centralized subsystem, which will be managed by ERIC to perform retrospective searches and various notification routines to OE personnel, researchers, and research-oriented educators. Specialized documentation services will also be offered upon agreement with other OE units to support specific laws, or OE projects.*
>
> *"The component units will be coordinated and, in some instances, created from OE funds in such a way that the entire field of educational research will receive increasingly extensive*

> *documentation. All OE contracts involving information retrieval processes relative to research literature should be processed by ERIC and subject to ERIC supervision from a technical point of view."* [52]

Burchinal asked the administrators to whom he spoke for their reactions to this policy statement and pleaded for an endorsement in the form of an official mandate from either the OE or HEW level. [53] However, he never got the reaction he wanted.

There was one important intentional omission from the above OE formal mission statement: the word "dissemination." Throughout the seven-page presentation, Burchinal made numerous references to ERIC involvement with "dissemination," "the dissemination network," "dissemination channels," "dissemination systems," "retrieving and disseminating information," and so on. Yet Burchinal was acutely aware of the important implications of this word. For example, he knew that Goodman had gone through a tortuous mental exercise in trying to break down the term into useful subterms and operational concepts; in fact, Goodman had created an interesting and original diagrammatic picture of the word. [54] Also, it should be remembered that Burchinal headed the Division of Research Training and Dissemination. So the word was of paramount significance to him.

"Dissemination" had too many wide-ranging possibilities in its definition for Burchinal to confine them to ERIC alone. He believed that *"Dissemination includes any method to distribute information describing educational research. More specifically it includes the use of audio-visual techniques, demonstrations and displays. It involves the use of conferences, workshops, and seminars. It utilizes the full potential of OE publications, professional organizations and other forms of mass media."* [55] A proper and effective dissemination program, Burchinal believed, should consist of the following ingredients:

> "1. *A clearly defined audience, including their information requirements.*
>
> 2. *A well-organized collection of pertinent information (the information base).*

3. *The techniques and the tools to get the message across.*
4. *A means of systematic and continued evaluation*"[56].

The audience or user groups mentioned in the first item above were of primary importance and included "*...research personnel in colleges and universities, teachers, administrators and curriculum supervisors in public and private schools, staff members in State Departments of Education, and other Government agencies*"[57]. Additionally, Burchinal saw even a wider potential audience which he called "secondary user groups" which consisted of educational associations, general administrative organizations, industry, and the general public. "*Efforts are underway*," Burchinal wrote, "*to analyze the information requirements of all clientele and to develop dissemination programs keyed to their individual needs.*" [50]

Burchinal's dissemination strategy encompassed a grand design which could have led to his assuming total responsibility for all OE efforts to gather the results of all such efforts. These aspirations never completely materialized. A few years later Burchinal and Clemens were successful in implementing several dissemination plans which attempted to involve the whole of OE. For example, they inaugurated a program called PREP (Putting Research into Educational Practice). They also performed some successful experimental work with educational field agents, based loosely on the Department of Agriculture's extension agent concept. A major effort to grow out of the dissemination concept was the State Capacity Building Program, which developed more fully under the aegis of NIE. But the various OE managers never wanted to relinquish dissemination responsibility for their own programs, particularly those of a nonresearch variety. Ultimately, when OE research activities transferred to NIE, the remaining OE managers created their own "National Diffusion Network" which was an attempt to accomplish at least some of the things Burchinal had in mind.

Concurrent with Burchinal's briefing to the OE administrative staff (in October 1965), ERIC had some information detectives at work searching for clues to help ERIC managers solve the mystery of detailed system design.

For in June 1965, ERIC had signed a contract with Informatics, Inc., of Sherman Oaks, California, to ferret out data applicable to the following study tasks:

> "1. *To determine present information needs among persons concerned with educational research.*
>
> 2. *To identify the technology available to satisfy those needs in the 1969 era.*
>
> 3. *To plan an orderly transition from the initial ERIC posture to one which would satisfy the needs in the most economic and effective manner."*

The principal investigators for Informatics were Jules Mersel, Joseph C. Donohue, and William A. Morris. These men interviewed the amazing number of 154 people who fit into one of the following groups: (a) university faculty with OE research grants, (b) research staffs of state departments of education, (3) OE staff members, and (4) information scientists in government and private research organizations. In the course of their investigations, they visited 22 states, and 61 institutions. Mersel and his fellow investigators prepared a lengthy report of their findings. This was exactly what Burchinal and the ERIC managers wanted: ideas, opinions, expectations, and prognostications of what the educational research community expected then and in the future as well as the current state-of-the-art of information systems and their potential for improvement.[59]

The Informatics report appeared in April 1966, but prior to that time Burchinal had the benefit of interim discussions with the authors as well as internal staff meetings to discuss progress of the project. Exactly how much of the Informatics report was adopted or discarded was not important --- it was the accumulated information, the acceptance or rejection of ideas, or even the stimulation to a revision of ideas which was important. Burchinal was in debt to Mersel and his colleagues for furnishing valuable information at the time important system decisions were being formulated.[60]

CHAPTER III. BUILDING THE ERIC SYSTEM - 1965-1966

Establishment of the ERIC Document Reproduction Service (EDRS)

At the time ERIC distributed the second large packet of Operation Fingertip material on October 15, 1965, the covering letter promised members of the educational community that final arrangements were in progress for setting up a document reproduction service for providing microfiche and hard copy texts to users at nominal cost. Hard copy, of course, refers to xerographic reproduction similar to that produced with a Xerox machine. Microfiche, literally, means microcard. Each microfiche is a four-inch by six-inch sheet of film containing multiple rows of document page images. The total number of pages filmed on one microfiche depends on the camera reduction ratio, film quality, and the entire system of microphotography used in the process. In 1965, the reduction ratio for ERIC microfiche was established as 20 to 1 (i.e., 58 frames could be recorded on each microfiche)**.

Actually, what Haswell was obliquely referring to in the above letter was the fact that on October 4, 1965 ERIC had issued a Request for Proposals to set up the ERIC Document Reproduction Service (EDRS)*. Six firms responded to the OE invitation, the competition winner being the Micro Photo Division of Bell and Howell Corporation, located in Cleveland, Ohio. The resultant contract was signed on November 19. Because this contract set the basic standard for all future operations of the EDRS, a brief review of the contract provisions will explain what ERIC managers had in mind for this key segment of the ERIC system. Basically, the idea was to contract with a commercial organization to handle all the reproduction requirements of those interested in obtaining copies of ERIC documents. The profit expectation on the part of Bell and Howell lay largely in the number of microfiche and hard copy orders which would be placed by the public: however, OE guaranteed that it would order a minimum of 2,500 master negatives and 250,000 duplicate microfiche. This amount of work was covered in the face value of the contract---$24,750. Other significant provisions of the contract were as follows:

---

*Consistent with the bureaucratic penchant to abbreviate or create an acronyn for everything, most people referred to this organization as EDRS.

**This standard applied through the November 1962 issue of *Resources in Education* (RIE). For the December 1972 issue of RIE the ratio was changed to 24 to 1 (i.e., 98 frames per microfiche).

1. Master negatives which the Atomic Energy Commission had produced for Operation Fingertip were turned over to Bell and Howell to use in filling orders for microfiche and hard copies of documents contained in what became known as the "Disadvantaged Collection".

2. It was anticipated that by June 1966, OE would have a minimum annual input of 1,000 titles for microfilming.

3. OE would, through various announcement mechanisms, inform the public as to what documents were available, how copies could be obtained, and the price schedule.

4. The contractor was expected to begin supplying hard copies within 30 days after award of the contract, and within 90 days Bell and Howell was obligated to begin reproduction of duplicate microfiche.

5. All microfiche produced would fully meet the specifications set forth in standards created by the Committee on Scientific and Technical Information in June 1965. The contractor was obligated to provide silver negative microfiche and either Diazo or silver microfiche duplicates.

6. OE would obtain a written release for all copyrighted material which would be furnished to the contractor for reproduction.

7. The period of the contract was for one year, with the government having the option to renew it for another year[1].

Shortly after the contract became effective, ERIC distributed a one-page flyer which announced the service and the prices of the products. For this first service period, microfiche cost nine cents per unit and paper copy four cents per page[2].

ERIC Seeks Clearinghouse Proposals

The terms "clearinghouse" or "satellite center" were used throughout ERIC's early experience with minor contracts made with various institutions for document collection and indexing activities. However, beginning in December 1965, the term "clearinghouse" began to mean something closely analogous to what a Clearinghouse is today under the full-fledged ERIC system. Even a short time previously, in October 1965, when Burchinal gave his briefing to the OE administrative staff, he did not describe precisely what he had in mind when he talked about clearinghouses or satellite centers. But soon thereafter, when Kennedy began writing the Request for Proposals (RFP) to establish clearinghouses, the design concept became more and more solidified as he prepared drafts for Burchinal's and Haswell's approval.

The Request for Proposals hit the street in December; the deadline for proposal submission was March 15, 1966[3]. Two bidders' conferences were scheduled for providing additional background material for those interested in submitting bids: one in Chicago at the Pick-Congress Hotel on February 17, and one in the OE offices on February 23.

As a prologue, the Request for Proposals stated that the bidders were expected to participate in four basic tasks:

> "1. *Establish and operate a specialized clearinghouse for research and research related information in cooperation with the Educational Research Information Center (ERIC) of the United States Office of Education;*
>
> 2. *Provide services in the clearinghouse to acquire, process, store, retrieve, and disseminate materials in the defined subject area;*
>
> 3. *Assist ERIC in the project of building an educational thesaurus; and*
>
> 4. *Provide means to test and evaluate the effectiveness of the clearinghouse's operations".*

Kennedy made it very evident that a clearinghouse was expected to concentrate on collecting what later became known as "fugitive" materials, rather than those items which were easily available through publisher lists and other conventional publication channels. So Kennedy inserted the following statement into the Request for Proposals:

> *"ERIC is concerned with the acquisition of relevant materials encompassing not only basic and applied research reports but also the emerging knowledge, innovative ideas, and other materials which have high current utility. A great wealth of materials exist not in the conventional bound and published form but, instead, as obscure materials, many of which pass elusively about the profession as current practice reports,*

> *conference presentations, and 'cutting edge' type papers. This emerging and tentative information is also that which is most easily lost."*

Another ERIC concept---the theory of decentralization---now became solidified. Kennedy's statement in the Request for Proposals on this point was very clear and succinct:

> *"Development of a decentralized system using specialized documentation processing centers, rests upon the conviction that persons knowledgeable in a given substantive area of educational research should decide what documents are of such sufficient value that they should be distributed nationally. Thus, acquisition and selection of documents is carried out at various clearinghouses, each of which has the responsibility for a given substantive field of research."*

Kennedy and the ERIC managers labored over what specific divisions of the educational world should constitute the major thrust of clearinghouse efforts. Not only did they include those fields of education which had been the subject of major Congressional action, but they also included major OE program areas as well as what they described as the *"current critical areas in American education."* Potential bidders could propose clearinghouses in the following subject areas:

- Administration
- Arts and Humanities
- Community Colleges
- Disadvantaged
- Early Childhood Education
- English
- Facilities
- Foreign Languages
- Gifted
- Guidance and Counseling
- Handicapped Children and Youth
- Learning Processes
- Library
- Mathematics
- Media
- Natural Science
- Reading
- Small School Systems
- Social Sciences/Social Studies

ERIC would allow proposers to submit bids for subject areas not listed above; however, any such idea had to have a strong detailed statement of justification.

One of the first requirements to consider for a clearinghouse was establishment of an advisory board. *"Membership on the Advisory Board should include representatives from the outstanding practitioners in the field, from national professional associations where applicable, as well as representatives from the research community".* Central ERIC intended that the clearinghouse advisory boards should participate in defining the subject area to be covered, establish criteria for acquisition and selection of documents, and provide overall policy guidance and direction.

The Request for Proposals showed intensive concern on the part of the ERIC staff for the professional quality of clearinghouse staff members. Kennedy estimated that each clearinghouse should have about three professional personnel who were considered subject experts and one of these should be knowledgeable in information retrieval or library related activities. This professional staff should be augmented by about three clerical personnel. The individual who accepted responsibility for managing the information retrieval aspects of the clearinghouse should perform at a full-time level; the other professionals could be part-time.

Another requirement stated that the clearinghouses's host institution should furnish the physical office space and all the necessary accouterments such as desks, typewriters, file cabinets, and other routine office equipment. However, items considered unique to the operation of an ERIC Clearinghouse---such as microfiche files, microfiche readers, microfiche reader-printers, or microfiche reproducers---could be included as budget items to be purchased with Federal funds. No allowances would be made for the purchase of any major indexing and retrieval equipment. If this type of equipment were considered essential, it should be obtained on a rental basis.

Prospective bidders were alerted to the requirement for a vigorous acquisitions program for locating and collecting research and research-related materials. Here Kennedy went into detail, saying, *"Unpublished documents, reports, papers, and other communications should be sought by checking on new research projects, spotting conferences, seminars, and* *workshops planned in order that contributors may be contacted for reprints or other reports. Direct correspondence or personal contact may be made with individuals or institutions thought to be doing work relevant to the center mission."* Central ERIC managers were well aware of the problems associated with document selection criteria, but the only advice they could offer was: *"Items are to be screened for quality and only those of sufficient merit and judged usefulness should be processed into the system."* Clearinghouse directors were to rely on their advisory boards for the development of guidelines for quality control. Book materials which normally found their way onto library shelves were not to be processed into the ERIC system; journal articles were to be included only on a very limited basis, hopefully numbering less than one-third of the total input. The reason: *"ERIC recognizes the inadequacy of existing controls over periodical literature in the general field of education and is working toward the development of a centralized process for indexing and abstracting this literature."* This, incidentally, was the first indication on the part of ERIC's management that they were thinking of setting up some kind of competition to the existing library reference tool *Education Index.*

Documents were to be indexed and abstracted on a special form---the "ERIC Document Resume"---which Central ERIC had just recently devised. No rules for abstracting were included in the Request for Proposals except the statement that *"information abstracts will be prepared."* The ERIC staff intended to hold training sessions after the clearinghouses were set up. Some limited guidance already existed for indexing activities. ERIC had published the "Guidelines for the Development of a Thesaurus of Education Terms"---a 13-page document which embodied the concept of coordinate indexing and established basic rules already worked out by Central ERIC. However, certainly one of the major tasks confronting each clearinghouse was to assist ERIC and its Panel on Educational Terminology to develop the educational thesaurus. The resumes which the clearinghouses submitted were to undergo scrutiny at Central ERIC for consistency of indexing and abstracting practices, after which ERIC personnel would select the items which were to be forwarded to EDRS for microfilming and the creation of microfiche and hard copy reproductions.

Central ERIC---following the practice of the Clearinghouse for Studies on Higher Education---still regarded itself as being responsible for responding to all information queries. The Request for Proposals, however, did require the bidders to develop a capacity to answer questions. Yet, all flyers, brochures, and other publicity announcements would invite all queries to be sent to Central ERIC which would only attempt to answer general questions; all more complex and difficult reference questions would then be sent to the subject experts in the appropriate clearinghouse. ERIC managers believed that *"Inquiries may be answered by prepared bibliographies which are available, by custom-made bibliographies resulting from a specific search of the file, or by the preparation of a summary statement by a subject specialist."* Then, too, the clearinghouses were expected to become involved in other service-connected activities. For example, each one was expected to publish a bulletin or brochure, describing its activities and services. In addition, a monthly accession list would inform each educational subject area member as to what types of information the clearinghouse had recently collected. A quarterly abstract journal would be prepared for dispatch to a selected audience. Also, a periodic newsletter was another outreach mechanism by which the clearinghouses would keep their clientele informed on a variety of topics.

At the time of issuance of this Request for Proposals, ERIC personnel and others were deeply involved in preparation of a thesaurus for ERIC. So another obligation on the part of the new clearinghouse contractors was to participate in the building of this new word structure for the field of education. For the moment, however, the bidders were only obligated to provide a short paragraph describing their subject orientation and scope, the size of their collection, and the types of documentary materials which they would process. In addition, their actual and potential audiences or users should be identified.

Peculiarly, there was a small item under the heading of "Budget" which because of its location and its brevity appeared to be an afterthought:

"Funds should be provided to commission state-of-the-art papers by consultants or for the assistance of consultants in developing criteria for insuring the high quality of input to the system". There was no further explanation of this item. Later, of course, ERIC became engaged in a significant number of what became known as *"information analysis products"*.

Proposers were advised that special attention should be given to maintaining adequate statistics pertaining to question answering, the usage of indexing terms, and operational costs for all activities. These would serve as keys for self analysis of all activities to compare clearinghouse operations and to see how the ERIC system stacked up against other information activities.

Creation of the First ERIC Clearinghouses

The ERIC staff really beat the drums in announcing the contract competition for ERIC clearinghouses. The bidders' conferences in Chicago and Washington attracted more than 250 interested participants; more than 1,800 copies of the Request for Proposals landed in the hands of those who were either curious or serious about making bids. ERIC received 45 proposals in 16 of the 19 areas of education which had been offered as possible subject areas[4]. The proposals were subjected to very close scrutiny during the review procedures: each proposal was reviewed by the four key professional ERIC staff members, by one or more OE subject specialists, and by two or more external field readers.

Two proposals, however, arrived in ERIC considerably in advance of the deadline and did not receive the total formal review. These two were referred to as "prototype clearinghouses". In the early part of February 1966, the OE contracts office received ERIC authorization to negotiate a contract with Ohio State University to create a Clearinghouse on Vocational and Technical Education. Later in the month the contracts office conducted a negotiation with City University of New York for a Clearinghouse on Urban School Personnel. Both contracts became effective on March 1, 1966[5].

Then, after considerable evaluation, discussion, and negotiation, OE selected 10 other clearinghouses to begin operation on June 1. (See Figure 1)[6]. The Clearinghouse on Teaching of Foreign Languages, as well as the Clearinghouse on Linguistics and Uncommonly Taught Languages were funded with money from Title VI of the National Defense Education Act of 1958; the Clearinghouse on Exceptional Children's source of funding came from the OE Handicapped Children and Youth Branch. All the others received support through Cooperative Research funds[7].

In a press release dated July 11, 1966, OE Commissioner Harold Howe, II pointed out that educational research was currently producing a large and growing mass of information for improving education in all areas. Howe stated: *"The rate at which this information emerges will accelerate in the years to come. Unless it is made readily available to teachers, administrators, and researchers themselves, progress in education will be thwarted. Through the Educational Research Information Center, the Office of Education is coordinating an effort to assure that every child in every school may benefit from advances in education"*[8].

ERIC Creates the ERIC Facility

In most human enterprises, however judiciously the planners conceive the organization and operational framework, they find that subsequent events cause them to modify their original concepts. This is triply true in Government circles. It is a certain bet that any existing Government organization, operation, or procedure will soon change. Kent and his Western Reserve colleagues naturally visualized ERIC as being modeled along the lines of other major information systems---with a large cadre of Federal employees performing most of the operational chores. Kent's proposed organizational chart, although it did not pinpoint the precise number of people, clearly indicated a large OE staff[9].

Haswell, reflecting his experience with the Clearinghouse on Studies on Higher Education, was thinking along the same lines as Kent. Thus, Haswell

UNIVERSITY OR ORGANIZATION	CLEARINGHOUSE	DIRECTOR	AMOUNT	START DATE
Ohio State University	Vocational and Technical Education	Robert E. Taylor	$ 88,030	March 1, 1966
City University of New York	Preparation of Urban School Personnel	Leonard J. West	$135,405	March 1, 1966
University of Oregon	Educational Administration	Ionne F. Pierron	$ 90,365	June 1, 1966
New Mexico State University	Small Schools and Rural Compensatory Education	Darrell S. Willey	$130,337	June 1, 1966
University of California, Los Angeles	Junior Colleges	Arthur M. Cohen	$108,731	June 1, 1966
University of Michigan	Counseling and Guidance	Garry R. Walz	$ 90,903	June 1, 1966
Ohio State University	Science Education	John S. Richardson	$122,031	June 1, 1966
Indiana University	Reading	Edward G. Summers	$155,855	June 1, 1966
Yeshiva University	Disadvantaged Children and Youth	Edmund W. Gordon	$230,106	June 1, 1966
Modern Language Association of America	Teaching of Foreign Languages	Kenneth W. Mildenberger	$198,045 (18 mos.)	June 1, 1966
Center for Applied Linguistics	Linguistics and Uncommonly Taught Languages	A. Hood Roberts	$164,140 (18 mos.)	June 1, 1966
National Education Association, Council for Exceptional Children	Exceptional Children	June B. Jordon	$253,933	June 1, 1966

FIGURE 1: THE FIRST ERIC CLEARINGHOUSES

had started to staff ERIC and purchase equipment in a manner which pointed toward a large in-house operation. But this was not to be. Perhaps it was inevitable that only those OE programs which received a specific Congressional legislative mandate, along with a large block of funds, would be permitted to build large bureaucratic empires. Perhaps only an astute political bureaucrat and super salesman in OE could pull of a coup which was based on not much more than a research study, the power of logical argument, and an innate feeling of need. And perhaps it was partly because of these conditions and partly because ERIC managers realized that the very nature of the real educational world was such that the avenue of success lay in the direction of decentralization. Also, ERIC had already become accustomed to acting in an atmosphere of crisis. The only logical response to the requirements of Operation Fingertip was to maneuver funds quickly into the hands of commercial contractors who could provide instantaneous response and "vertical take-off" services. Time was a premium commodity. To unravel the red tape of personnel offices, equipment purchase procedures, and office space allocations---all notoriously tedious in the Federal Government---would have been self-defeating.

Therefore, it was quite apropos, when ERIC wanted to incorporate the final element into the system, that it knock on the door of commercial enterprise. ERIC now needed a central processing activity to carry out the system design and perform system activities so as to accomplish the nuts and bolts operations for a complete information system.

One of the first jobs which Haswell handed to Douglass E. Berninger, after he joined the ERIC staff in December 1965, was to write the Request for Proposals for the ERIC Facility*. Berninger's job became immediately more complicated because Haswell and Burchinal decided to incorporate research *projects* into the contract as well as research *reports*. The impetus for controlling research projects came from Robert A. Kane, the Bureau of Research Executive Officer. He was experiencing great difficulty in keeping track of research studies currently underway or those which had only recently been completed. In far too many instances he was uncertain whether OE had received a final report or whether a contractor had ever received final payment for his research work. The multitude of research efforts and the complexity of the contract conditions had created a managerial nightmare. Kane found the situation intolerable and persuaded ERIC managers that if he provided funds from a non-ERIC source, his requirements would be included in the Request for Proposals[10].

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*Actually, the designation of "ERIC Facility" did not become a common one until several years later. The Facility contractor, in the early years, was generally referred to by corporate name; however, "ERIC Facility" will be used throughout this narrative for the sake of current identification and clarity of reference.

The OE contracts office dispatched the Request for Proposals on March 11, 1966 under the formal heading: "ERIC Information Retrieval Indexing and Searching System". The general statement of work, compressed under five general points, was somewhat cryptic, and illustrated the haste with which the document was prepared:

> "1. *Selection, assignment, and documentation of retrieval information for research documents selected by the U.S. Office of Education.*
>
> 2. *Development of a thesaurus of educational terminology.*
>
> 3. *Implementation of the research documents into an information retrieval, storage, and searching system.*
>
> 4. *Preparation of manuscript and indexes required for the general dissemination of the research information.*
>
> 5. *Provide support for the development of the Educational Research Information Center (ERIC)".*

The document contained several pages of definitions and explanations; a carefully worded delineation of a "research report" versus a "research project"; some verbiage about indexing, abstracting, and cataloging; a short paragraph or two about the requirements for assistance in developing the ERIC vocabulary; and a brief outline of two manuscripts for documents containing indexes to research projects and research reports. The latter document, specifically, would include the indexing, abstracting, and cataloging efforts for approximately 3,000 final research reports which had been completed between 1958 and the end of Fiscal Year 1966. The other document would contain similar control information for 1,500 research activities that would be on-going at the end of Fiscal Year 1966. The

Request for Proposals contained requirements relating to performance schedules, personnel, and budget[11].

The Request for Proposals gave adequate background information, allowed considerable latitude for innovation and ideas for operations, and did not swamp the bidders with excessive details. In a way, its brevity also admitted that ERIC was wide open to suggestions for operational procedures which had not yet been established.

The successful bidder was North American Aviation's Space and Information Systems Division, located in Downey, California. Contract start date was May 9, 1966. The company was well acquainted with information system activities, having previously accomplished library-information work for the Federal Aviation Agency, Department of Defense, and the State of California. Benjamin E. Acton and H.G. Davis were the upper management level personnel at North American; however, James L. Ebersole became the project director with overall actual project management[12]. The total amount of money, for one year's effort for this first ERIC Facility contract was $177,570. But from this point onward, the budget picture soon became very complicated with amendments and partial-year add-ons, so that total amounts, by fiscal year---or any other kind of year---became very confusing*[13]. Perhaps a ball park estimate would place the first year's budget approximately at $250,000, which then rose to a figure---or rate---of approximately $500,000 for the second year. Or, if it makes any more sense, the contract costs totalled $937,132 for approximately two years and three months.

The first 12 to 18 months for what could now be called the ERIC system, were confusing. So many activities were going on at the same time. Much stirring, of course, was going on in the ERIC clearinghouses which, among other things, began to feed document resumes into the system. EDRS was supplying microfiche and hard copy reproductions to ERIC customers. The clearinghouses and Central ERIC were deeply involved in the question-answering business. Central ERIC was coordinating directors' meetings, arranging technical operations briefings, and conducting training sessions to insure uniformity of the data base. Central ERIC personnel, including Kennedy, Eller, and newcomers Lawrence Papier and Charles Missar were involved in numerous managerial roles. Burchinal's influence was always visible. He directed ERIC's destinies in the realm of the OE hierarchy, but was also deeply involved in all ERIC operations: it was he who OK'd or negated all ERIC moves or intentions. Haswell's involvement decreased during 1966 and in the latter part of that year he left ERIC, later to move to the OE field office in Dallas. Haswell as replaced by Kennedy who filled in as Acting Chief of ERIC while Burchinal set about to recruit a new ERIC leader. Burchinal persuaded Harvey Marron to take the job.

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*One amendment was signed in December 1966 with a price tag of $175,700. This amendment carried to August 31, 1967. Then, on September 1, 1967, another amendment was signed for a total of $583,862, which supported the ERIC Facility operations until August 31, 1968.[14]

Marron had excellent credentials. He had worked with the Atomic Energy Commission's Division of Technical Information---long regarded as the originator of many information system functions and considered by most information experts as one of the best systems in the world. Also, Marron had spent several years with the Smithsonian Institution's Science Information Exchange, where he was in charge of the very large and very important computer activities. Clearly, in a period of ERIC's large-scale entry into computer operations, Burchinal was happy to tap Marron's technical skills.

Marron joined the staff during an exciting period of ERIC's development. During the first 15 months of the North American contract, the ERIC system was undergoing significant growth at the contractor's West Coast installation. Central ERIC people frequently flew out to the West Coast, and North American people frequently came East. The telephones hummed with coordination discussions. Obviously, the distance factor was disturbing; yet both groups were dedicated to the task of building the best possible system despite the 3,000 mile handicap. Central ERIC managers made decisions on the spot, often in the midst of the operational environment. North American project workers had to make hundreds of independent detail-level changes or decisions as they worked on forms, machine-processing techniques, vocabulary control, indexing and cataloging techniques---or whatever.

To illustrate the complexity and detail of the North American involvement during the first 15 months of the Facility contract, the following long list of accomplishments is taken from their proposed amendment, dated August 7, 1967, which solicited funds to continue the contract for another year.

1. Designed and established the methodology for collection, intellectual and machine processing, manuscript preparation, and dissemination of information on OE projects and reports.

2. Prepared the first 10 monthly issues of RIE *(Research in Education)*.

3. Completed all work on 9 monthly issues of CPI *(Current Project Information)*.

4. Cumulated an index for the first 8 issues of RIE.

5. Issued a manuscript of abstracts and indexes for the so-called "Historical Collection" of significant past research projects.

6. Also issued an abstract-index volume for the Title I and Title III projects. The former, Title I, referred to as "Doing and Looking" was a group of documents relating to special programs for educationally deprived children. Title III category of documents, popularly called "Pacesetters in Innovation" was a special collection dealing with advancing creativity in education.

7. Accomplished a great deal of thesaural effort including preparation of an "Interim Thesaurus of ERIC Descriptors" along with four monthly supplements. In addition, delivered to Central ERIC camera-ready copy for the first edition of the *Thesaurus of ERIC Descriptors*, which included a rotated descriptor display. The North American vocabulary effort also compiled a special analytical listing of broader, narrower, and related terms---a useful document, of course, for the indexing efforts.

8. Compiled 10 issues of the Directory of ERIC corporate authors, along with a revised institution authority code.

9. Worked up procedures or guidelines for descriptive cataloging, indexing, and abstracting, along with flow charts of step-by-step procedures for clearinghouse input activities. And, because ERIC managers had planned for the clearinghouses to make *direct* input to publications rather than to have additional keypunching operations, North American personnel had to prepare instructions for using the Friden Flexowriter, so as to achieve standard data base elements on paper punch tape.

10. North American, at Central ERIC's request, also developed and implemented a single-resume-per-frame input for microfiche reproduction---so as to eliminate filming complications at EDRS.

11. A processing procedure was established to receive, collate, and standardize the receipt and processing of clearinghouse resumes for insertion into RIE.

12. Incorporated 1,740 resumes from the Disadvantaged Collection (the Operation Fingertip documents) into the ERIC data base.

Luckily for the contractor, its personnel did not have to start from scratch. North American management itself stated: *"This record of achievement could have been realized within such a short period only by starting with an off-the-shelf approach rather than creating an entirely new methodology. Existing NAA techniques for processing report and project information were the basis for initial development of both ERIC and project documentation activities. By working closely with the USOE-ERIC staff on network design and by adopting these NAA operational techniques to ERIC needs, the USOE was able to realize benefits for which NAA had already invested considerable funds. ERIC has thus been able to solve basic system problems one or two years earlier and at a considerable less expense than would otherwise have been possible"*[15].

James E. Houston, long involved with the ERIC Facility's Document processing operations and currently the ERIC Lexicographer, recalls the high-energy activities during the first 15 months of the North American contract. He remembers the tremendous backlogs of documents, the long hours donated to the ERIC effort, and the penchant for perfection in the attitude of employees[16]. They knew they were on the ground floor of a significant data base and responded with a dedication and intensity that became obvious to Central ERIC visitors. When project officer Kevin Arundel and ERIC Chief Marron visited the ERIC Facility in March 1967, Marron reported to Burchinal: *"I was impressed by the competence, interest, and enthusiasm of the NAA staff with the ERIC program. Clearly, it's just not another job. In return the NAA staff speak highly of the Central ERIC personnel. I hope we can maintain this high level of interest, dedication, and professional competence that appears to exist in the ERIC program"*[17].

A mountainous workload still faced the ERIC Facility. In its August 1967 proposal for the next 12 months, the North American Facility listed at least 36 major work elements under five broad tasks which Central ERIC had originally outlined for the contract. The proposal was funded at $583,862, from September 1, 1967 to August 31, 1968*.

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*Large-scale commercial enterprise, of course, is almost equally susceptible to organizational changes as is the Federal Government. As of September 22, 1967, North American Aviation, Inc., merged with Rockwell-Standard Corporation to become the North American Rockwell Corporation. Except for some physical movement of the ERIC Facility personnel, the ERIC contract activities were unaffected.

CHAPTER IV. ERIC OPERATES AS A SYSTEM, 1966-1969

To gain an overall understanding of ERIC, one should become familiar with the chronological flow of operational events: the meetings, conferences, budget discussions, planning sessions, major problems, and accomplishments. Therefore, the more functional aspects of the system---the thesaurus, RIE, CIJE, information analysis, question-answering---are relegated to later pages where they can be discussed in their own individual perspective, sequence, and detail, without interference of conflicting events.

First Directors' Meeting, June 1966

Meetings

From June 1966 until the middle of 1969, the ERIC staff was caught up in a very large number of meetings. Would there have been as many meetings if ERIC had not become a decentralized system: Probably. An "under one roof" ERIC system would have had more meetings "down the hall". More informal get-togethers. The decentralized mode required many more formal type meetings. That meant more detailed plans, more meticulous arrangements, more elaborate agendas. And, obviously, more money. Also, Central ERIC and ERIC system people consumed a large amount of time in travel status to directors' meetings, technical gatherings, annual review sessions, site visits, steering committee sessions, vocabulary improvement conferences, standing order customer workshops, professional association conclaves, and various special project get-togethers. Many meetings.

The first significant gathering of all key members of the newly constituted system was scheduled for June 27-28, 1966. Several weeks prior to that time Burchinal, Haswell, and all members of Central ERIC, entered into a minor hurricane of activities in preparation for the meeting. Haswell wrote a letter to all directors advising them of tentative agenda items and asking them for suggested changes or additions[1]. Central ERIC staff members discussed agenda details and all logistical details involving meeting rooms, luncheon and dinner arrangements, hotel reservations, exhibits, documentary handouts. Also, they resolved who was going to make presentations and what points would be covered.

Clemens, then Assistant Director of Burchinal's Research Training and Dissemination Division, met with the entire ERIC professional staff on June 6. He discussed individual assignment of discussion topics and logistical chores. He asked each assigned speaker or discussion leader to prepare an outline of his intended approach and subjects he would cover. They were to make sure that Burchinal had these in his hands by the 17th.[2] The ERIC managers knew they had a lot of ground to cover, wanted to prepare their homework carefully, and wanted not only to display strong, knowledgeable leadership, but also wanted to inject a spirit of urgency and cooperation into the minds of all system members. As time became short, preparations accelerated. On the Sunday before the meeting, Central ERIC staff members trekked out to Kennedy's house where, over beer and soft drinks, they went through a dry run of the agenda. Everything was ready.

On Tuesday, June 27, the conferees gathered in the OE Commissioner's Conference Room. Many years later, Carroll Hall, Associate Director of the Clearinghouse on Rural Education and Small Schools, described the meeting as "organized chaos". It was organized because events proceeded in an orderly manner and the discussion subjects flowed in logical sequence; it was chaos because so many of the group were thoroughly confused as to how the ERIC concept of an information system was actually going to function[3].

Burchinal opened the meeting by introducing the attendees to each other, for most of them were among strangers. Then Burchinal launched into some general background---such as reminding the audience that this was the first attempt, anywhere, to formulate and operate a decentralized information center. He said that OE had set aside about two million dollars for ERIC during the 1966 fiscal year and that over 1.7 million of that had been contractually committed. Then Burchinal spoke about the general purposes of ERIC, as well as the overall system concept and its principal components: the clearinghouses, Central ERIC, and the two principal contractors: North American Aviation (central editing and computer support) and Bell & Howell (micrographics support).

Kennedy was next. He asked clearinghouse directors to send him, within 30 days, a "readiness letter". This was to declare the status of clearinghouse staffing, to redefine subject scope areas, to indicate the managerial and workload statistics to be maintained, and to list the sources to be tapped for document acquisitions. He announced that Central ERIC was planning to conduct training sessions for indexing and abstracting operations (these preparations were already underway at the University of Maryland). Hopefully, Kennedy stated, the sessions could be held at one of the Midwest clearinghouses, perhaps in September. He asked all clearinghouses to send appropriate personnel to this training session. Also, the clearinghouses should submit formal requests to Central ERIC for acquiring Friden Flexowriters, because the planned input for the new data base announcement publication was to be in the form of punched paper tape.

Considerable attention, with Kennedy still the speaker, was given to the subject of "input". It had been decided, Kennedy said, that initially at least, Central ERIC would arrange for the processing (cataloging, indexing, and abstracting) of OE-funded research documents. The clearinghouses were to be responsible for acquiring and processing all other available educational documents. Kennedy warned the directors about the undesirability of multiple contacts with publishers, professional associations, and the like. Foreign documents should not be priority items; in fact, only such documents considered "exceptional" should be acquired and processed. Also, a special case was made for dissertations: again, only those considered of "exceptional" quality should be placed in ERIC. The obvious reason here, of course, was the existence of *Dissertation Abstracts,* already in the business of providing dissertation retrieval.

Kennedy indicated that publications originating in state departments of education would be handled through a special central collection agency. Central ERIC already had a proposal from the State of New York to handle such acquisitions on a nationwide basis. For all documents collected, the clearinghouses were advised to collect two copies, if possible. One should be processed into the system and would be destroyed during the microfilming process (destroying the binding allowed for much easier handling); one was to remain on clearinghouse shelves as a "back-up" copy as well as for general reference purposes.

One bogey of a decentralized system---the problem of overlap of subject areas, particularly with respect to the acquisition process---came to the surface at this very first meeting. Actually, it was the only topic which prompted some debate and participation among the directors. Several of them were concerned about other clearinghouses collecting documents or soliciting documents from certain organizations which were more properly allied to *their* clearinghouse. Central ERIC managers could only give the same advice then on such matters as they would continue to give more than a decade later: the clearinghouses should define their scopes carefully, exchange their scope notes, and iron out apparent overlap situations between themselves or among themselves. Central ERIC never wanted to, never could be, a proper arbiter for such conflicts. Although at times some directors did solicit such decisions.

A short time prior to lunch on the first day, R. Louis Bright, Director of the Bureau of Research, appeared briefly at the conclave. He was a quiet, unassuming man with a perennially busy schedule. He offered a few words of welcome and encouragement and quickly left to allow ERIC members to continue their deliberations.

After lunch, Kennedy briefly spoke about the problem of duplicate inputs. Neither ERIC managers, nor the ERIC Facility, had yet come up with a foolproof answer to the problem of file duplication when two clearinghouses processed the same document simultaneously. The only advice Kennedy would offer was to tell the directors not to worry about this problem. For the moment, at least, Kennedy was hoping the Facility would come up with some quick fix, some improvisation to eliminate at least some of the duplication.

Next on the agenda was Eller, primarily responsible for thesaurus development. He discussed some of the background of ERIC's decision to build a coordinate indexing system, and philosophized about the implications this had for reliable recall of documents from the file. Also, he briefly explained the purpose and some of the recent activities of the Panel on Educational Terminology*. Eller talked about the intense evolving phase which the thesaurus was currently undergoing; he asked that any judgments about the thesaurus be reserved until those developments were completed. It would be helpful, he stated, if each clearinghouse would designate one of its staff members to have primary responsibility for subject terms in their scope and be a single source of contact for him and his PET Panel members.

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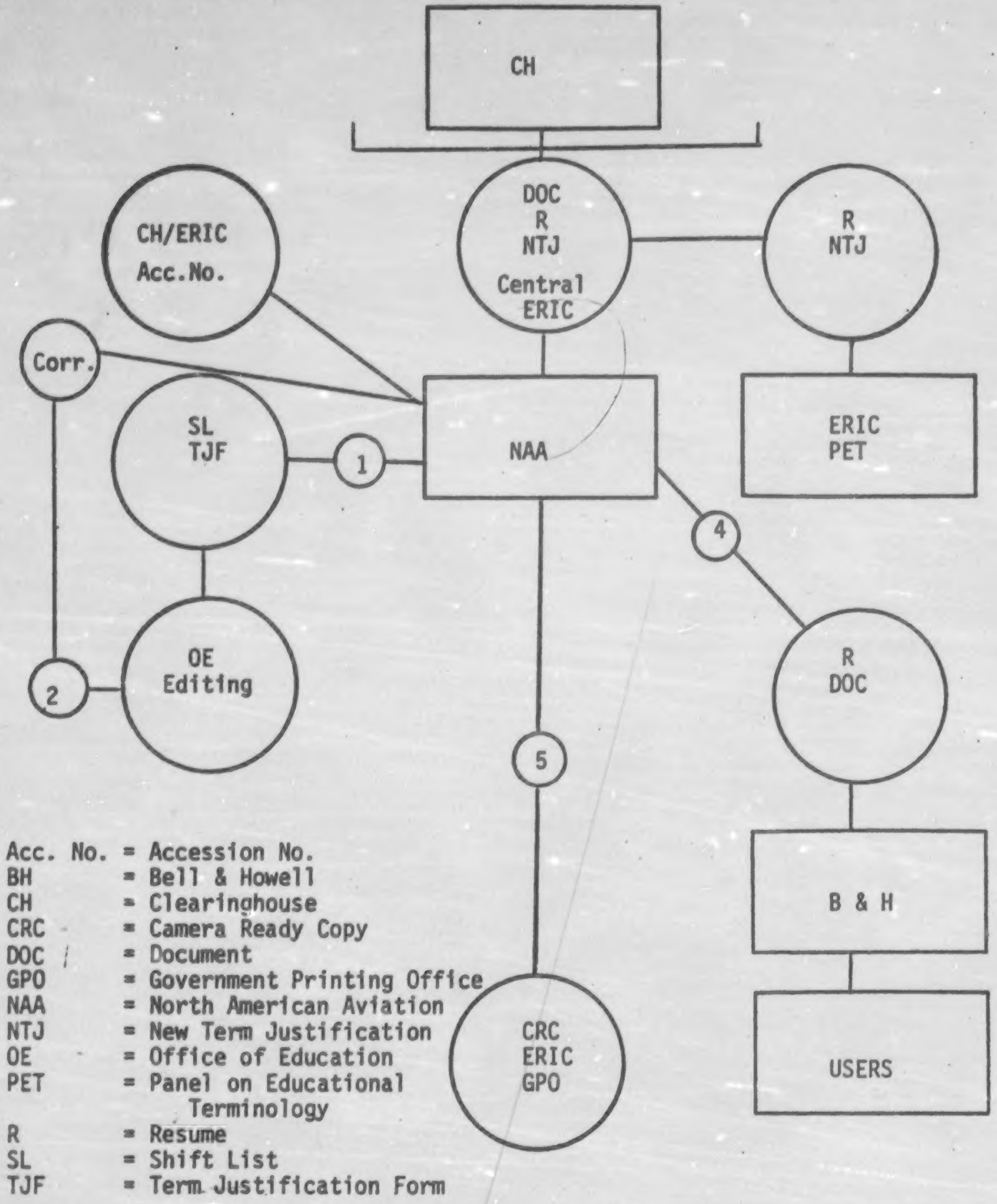
*The so-called PET Panel is discussed in some detail in Chapter VII.

Then Burchinal returned to the rostrum. He wanted to talk about the delineation of the fields of specialization, that is, how the existing list of clearinghouses cut across, or did not cut across, the entire spectrum of eudcation. Realizing full well that the existing 12 clearinghouses neglected many educational areas, he announced that he and his colleagues were studying the possibility (with due consideration of budget parameters and the receipt of quality proposals) for establishing six additional clearinghouses. He was thinking about the following subject areas:

1. Early Childhood
2. Educational Media
3. English
4. Mathematics
5. Library and Information Science
6. Higher Education

The first day concluded with some advice from Haswell. He pleaded with the directors *not* to advertise the existence of their establishments. Not yet. To do so would immediately result in their being swamped with research questions, he predicted. He did not think they were ready to respond. Also, he wanted to avoid their receiving inquiries about the fledgling ERIC system. Things were still in too great a state of flux.

The following day, June 28, the agenda called for further description of the new system procedures. Arundel, the North American contract monitor, introduced Ebersole, the contractor's project director. Ebersole displayed a flow chart (see Figure 2) which, for the first time, gave all system members a graphic concept of how the system worked. After Ebersole walked the audience through the chart, Burchinal explained that the intended timing of work flow events would place the ERIC document microfiche into the hands of clearinghouse personnel at the same time that the indexing-abstracting publication (RIE) would be distributed from the Government Printing Office.


CH
CH/ERIC
Acc.No.
DOC
R
NTJ
Central
ERIC
R
NTJ
Corr.
SL
TJF
1
NAA
ERIC
PET
4
2
OE
Editing
R
DOC
5
B & H
CRC
ERIC
GPO
USERS

Acc. No. = Accession No.
BH = Bell & Howell
CH = Clearinghouse
CRC = Camera Ready Copy
DOC = Document
GPO = Government Printing Office
NAA = North American Aviation
NTJ = New Term Justification
OE = Office of Education
PET = Panel on Educational Terminology
R = Resume
SL = Shift List
TJF = Term Justification Form

FIGURE 2: ERIC PROCESSING FLOWCHART, 1966

Also, he added, all clearinghouses would receive a complete collection of microfiche (at Central ERIC's expense) so that each of them, ultimately, could become a regional library for educational research. At this juncture, Burchinal announced that ERIC managers were already considering the possibility of changing ERIC's acronym to the Educational *Resources* Information Center. Peculiarly---despite the very broad implications and the many attendant new directions it implied---this statement prompted no discussion or questions among the attendees.

Then Berninger launched into a discussion and description of the "monthly publication," the title of which was intended to be *Research in Education.* He briefly described how the resume section would be handled, how the indexes would appear, what kind of numbering system would be used, and what plans ERIC had for annual and semi-annual cumulations*. There was some tentative and confusing discussion about RIE containing only OE-sponsored research reports and the possibility that a separate clearinghouse monthly publication (presumably similar to RIE) might contain non-OE reports. This concept was never adopted on a system wide basis. Berninger concluded his discussion by indicating that clearinghouses would be basically responsible for three types of publications: an annual bibliography in their individual scope areas, a newsletter, and special bibliographies on subjects of special interest and high demand.

Lawrence S. Papier, who had just recently joined the Central ERIC staff, then turned the directors' attention to the subject of system evaluation. He emphasized the importance of document selection, noting that the "half-life" of most documents is very short. Once placed in the file, a document will always stay in the file, despite the fact that most of its value decreases rapidly. He also urged the directors that once they begin to answer questions they should be constantly aware of maintaining a high level of user satisfaction. The constituent elements involved in this dynamic process were: usage, response, interaction, recall, and relevance. The directors, Papier stated, should exercise routine managerial control through the compilation of relevant statistics---particularly those relating to acquisitions, technical processing, reference activities, administration, clerical processing, and general management: both costs and number of items.

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*RIE is described fully in later pages.

From this point forward, the meeting became less formal; several members of Central ERIC filled in with extraneous specific details in answer to questions from the floor or covered points which had been raised during luncheon or dinner discussions. A different kind of informality was provided by the exhibits of various commercial equipment manufacturers. Central ERIC had arranged for about a dozen companies to display microfiche readers, reader-printers, tape typewriters, microfiche file units, fiche-to-fiche reproducers, and other copying machines.

The overall general tenor of the meeting had been oriented toward Central ERIC and the ERIC Facility occupying the stage and the clearinghouse directors sitting as an audience. ERIC staff member Missar, who took very detailed and clear handwritten notes of the meeting, noted that only four substantive comments or suggestions emanated from the audience:

1. Leonard J. West, Clearinghouse on Preparation of Urban School Personnel: recommended that arrangements be made for interested directors to visit some of the educational information centers which were actually in operation.

2. Robert E. Taylor, Clearinghouse on Vocational and Technical Education: asked about posters, brochures, and exhibits on or about ERIC which could be used for promotional purposes at professional meetings and conventions.

3. Arthur M. Cohen, Clearinghouse for Junior Colleges: indicated that although Central ERIC and North American Aviation had thought about and calculated system procedures for input to ERIC, they had not given equal time to thinking and planning user services.

4. At one point in the meeting Central ERIC had encouraged the directors to use the Termatrex retrieval system as an interim measure prior to the availability of computer retrieval. Cohen expressed some doubts about the Termatrex equipment[4].

This initial conclave of all key system personnel was, perhaps, the most significant ERIC meeting ever held---certainly that was true for the directors. Many---possibly most---had only a very general idea of how ERIC was intended to work. All of them had outstanding backgrounds in various fields of education; yet only a few had peripheral or direct experience with the detailed functions of an information system. All of them had just recently received their ERIC contracts---as a matter of fact, a representative from the OE Contracts Office, Jacob J. Maimone, actually handed out official contract copies to several directors during the meeting. At least the meeting provided the proper springboard for the directors to gain sufficient background data to prepare them for the flood of operational details scheduled several months later at the national technical meeting.

Throughout the history of ERIC, directors' meetings were always considered significant events. During the first few years they were held frequently; actually, the plan was to meet quarterly, although that was not strictly adhered to. Later on, they became somewhat less frequent. At the January 30-31, 1968, directors' meeting, Marron announced that Central ERIC hoped to reduce the number of such meetings to about two a year. Also, by that time Central ERIC had already adopted the practice of holding annual review sessions, and these provided a forum for detailed individual discussion and a thorough exchange of views and news.[5] Then, at another directors' meeting, April 21-22, 1969, Marron told the directors that from then on the directors' meetings would be largely confined to policy matters. All technical aspects of system operation would be covered in other meetings---to be held about once a year---which the associate directors and principal technical people would attend. This first *bona fide* technical meeting occurred during June 1969.[6]

As indicated for the first directors' meeting, Central ERIC personnel, frequently with all professional characters contributing, did a great deal of homework prior to meeting times; debated agenda items, assembled printed materials, prepared topical speeches, and handled logistics. Burchinal carefully choreographed the first meeting; he and Marron, with assistance from Clemens, meticulously planned later meetings. This fact remained true even when Burchinal formed the ERIC Directors' Policy Group. The charter members of this group were:

1. Kenneth W. Mildenberger, Chairman
   Clearinghouse for Teaching of Foreign Languages
2. Robert E. Taylor
   Clearinghouse for Vocational and Technical Education
3. Wilbur Schramm
   Clearinghouse for Educational Media and Technology
4. Edward G. Summers
   Clearinghouse for Reading
5. Garry R. Walz
   Clearinghouse for Counseling and Guidance

The basic purpose of this group was to give advice to Central ERIC and to come forth with agenda items or ideas to be discussed at future meetings.[7] Burchinal and Marron also met with the group. Through the several years of its existence membership shifted from director to director; then in 1970 the group was disbanded---or rather just died of inertia. Later on, after Charles Hoover became the Chief of ERIC, another Policy group was established with renewed vigor under the leadership of Donald K. Erickson, Clearinghouse for Exceptional Children, and Robert W. Howe, Clearinghouse for Science, Mathematics, and Environmental Education. The second try proved more productive than the first.

At the directors' meetings important policy and operational matters were discussed which were either settled then and there or which provided Central ERIC with background information to help formulate a policy. Many issues were debated in a truly rational and democratic fashion. Certainly another important aspect of the meetings was their collective atmosphere which alleviated the headquarters-field office syndrome which was---and remained---a fact of life in the decentralized ERIC organization. Nevertheless, ERIC staff members heard critical comments from some directors who chafed at being "talked to" or "lectured at"...or being constantly exposed to opinion, decisions, and attitudes of Central ERIC, without sufficient opportunity for individual comment---or being treated as merely contractors and not constituent elements of a common system entity---or suffering through presentations which some directors characterized as "dog and pony shows". In truth, any such behavior on the part of Central ERIC was probably occasioned through the belief that there was a necessity for decisiveness, for a strong managerial stance---particularly during the early meetings. Later on, when the directors had all gained wide experience in information science and Central ERIC "personality" became more receptive, the directors began to participate to a greater degree and with much more spirit than in early days.

Throughout the first 15 years of ERIC's existence, there have been more than 20 directors' meetings (the precise number is difficult to ascertain because there were several meetings which could not be counted as "formal" in nature). Also, there were frequent "policy committee" meetings, which became particularly effective in the 1957-79 period under Howe's leadership. From about 1973 or 1974 onward, the meetings became somewhat more democratic, more system wide in participation, and probably more effective.

Other Meetings

Because they were so fundamental to the initial operation of ERIC, two other early system meetings should not go unnoticed: the so-called technical training sessions. These were arranged through an agreement between Burchinal and John S. Richardson, of the Clearinghouse on Science Education, at Ohio State University. Because travel and per diem costs were not generously provided in the initial clearinghouse contracts, it was decided to hold the meetings in Columbus, Ohio, with Richardson's clearinghouse acting as "fiscal agent" and picking up the travel and per diem costs for all attendees as well as the conference costs themselves. This type of contractual gambit was used frequently throughout the administration of ERIC for various kinds of meetings, workshops, and conferences. So Richardson's clearinghouse received about $25,000 to support the training sessions[8].

The first technical discussion, October 16-21 1966, was a large gathering of clearinghouse directors, staff members, Central ERIC people, North American Aviation personnel, as well as representatives from the OE regional laboratories. Burchinal wanted the latter people to become familiar with ERIC for the purposes of making documentary contributions to the system as well as enabling them to participate as system users.

This technical meeting was indeed technical. The discussions went into the minute details of acquisitions, abstracting, indexing, new thesaurus terms, document flow, preparation of the ERIC resume form (the input document), training of new personnel, copyright, document retrieval, and services to the educational public. The ERIC Facility had been working hard to establish all detailed specifications and rules for system procedures, and this was their first crack at spreading the word. Actually, it was a kind of preliminary exposure in oral form, of what was to ultimately become the *ERIC Processing Manual.*

So detailed, in fact, was the tenor of the meeting, that Potts, the director from the rural education clearinghouse, made the following restive comment:

> *"I may have received a false impression, but after one talk I distinctly felt that ERIC was actually developed as a means of gathering information strictly for the convenience of the Bureau of Research and Development in putting out a publication. Nothing was mentioned about helping teachers, researchers, etc. Probably a breakdown in communications here."* 9

Amidst all the detail, Kennedy did come up with one general policy statement. It had to do with retrieval: *"There is to be no purchase of data processing equipment,"* he said. He explained that he expected the clearinghouse directors to go along with the Termatrex retrieval equipment.

Also, Kennedy announced that Central ERIC was just beginning preliminary discussions for developing a centralized computing facility to serve all clearinghouses on a shared-time basis. He therefore solicited that the directors not develop local systems which might not be compatible with the central facility. As it turned out, these plans did not jell for several years.

It was an intensive week with everyone's interest focused on the primary level of one word in the thesaurus, how to fill out one line on the input form, what specific address to use when mailing something to the Facility, the difference between an identifier and a descriptor, and the basic attitudes that abstractors should bear in mind when reading a document. Of somewhat historical interest was the fact that this was the first occasion when everyone in the system was exposed to the designation of the two-letter alpha symbol for the first 12 clearinghouses. The alpha designations were to be used by the Clearinghouses in their document numbering and identification system which would appear in RIE when they started making their documentary contributions. These first prefixes were:

ALPHA SYMBOL	CLEARINGHOUSE	ALPHA SYMBOL	CLEARINGHOUSE
AL	Applied Linguistics	UD	Urban Disadvantaged
JC	Junior Colleges	SP	School Personnel
EC	Exceptional Children	FL	Modern Language Association
RE	Reading	SE	Science Education
CG	Counseling and Guidance	VT	Vocational Education
RC	Rural Education	EA	Educational Administration

The second Columbus meeting, May 15-19, 1967, was equally valuable, and equally technical. At that time all of the clearinghouses were beginning to submit their first resumes for RIE. It was the review of those resumes which consumed about half of the week-long session, which mostly technical people attended---although a few directors were present. Long, involved sessions laboriously covered the entire processing procedures. Considerable homework and committee work had preceded the meeting. For example, a

"Descriptive Cataloging Group" established a preliminary set of rules. This group consisted of the following persons:

1. William E. Burgess
   North American Aviation
2. Diana J. Ironsides,
   Clearinghouse on Adult and Continuing Education
3. Robert Butler
   Clearinghouse for Disadvantaged Children and Youth
4. Alyce Sands
   Clearinghouse for Teaching of Foreign Languages

Also, Alyce Sands and Erwin Flaxman, of the Clearinghouse on Disadvantaged Children and Youth, had initiated some guidelines and principles for abstracting.

Another working group, that one concerned with "Equipment and System Revision" reported on the almost total lack of communication among clearinghouses, as well as the lack of effective communication between the clearinghouses and Central ERIC. This group consisted of:

1. Carroll Hall
   Clearinghouse on Small Schools and Rural Compensatory Education
2. Ronald Millar
   Clearinghouse on Adult and Continuing Education
3. Robert Butler
   Clearinghouse for Disadvantaged Children and Youth

The group pleaded for someone to publish some kind of newsletter, at least for the purpose of alerting all system components to be aware of current technical decisions. The problem, the group pointed out, was that many system elements (committees, Central ERIC, and the ERIC Facility) were all issuing system rules, regulations, procedures, and changes thereto, which did not always reach everyone simultaneously. Serious decentralization problems. Actually, the newsletter problem was not to be solved until August 1967, two months after Frank R. Smardak joined the ERIC staff when, among many other monitoring responsibilities, he started to publish a periodic (every month or two) newsletter.

Meeting attendees made several comments about the Flexowriters and the paper tape input for RIE. The Flexowriters were not working satisfactorily, but they had to be lived with for the present because Central ERIC and North American had worked them into the system *modus operandi*. A few clearinghouses were more patient and indicated they were hoping to use them for various functions (mailing lists, bibliography preparation, production of catalog cards) in addition to using them for input.[11]

The meeting afforded a great opportunity for all technical representatives to talk about, argue about, the "nitty gritty" elements of the system, in much the same manner as the October meeting. Thus, these two meetings served as models for the future technical gatherings. As each year passed, as system improvements came along, and as problems inevitably appeared, the technical meetings provided the right forum to work things out and allowed each clearinghouse a chance to learn the new methods or make contributions toward problem solution.

More Clearinghouses, Some Changes

The basic reason for establishing only 12 clearinghouses during the first wave of competitions during the spring of 1966 was the limitation on the ERIC checkbook. For the dominant idea in Burchinal's mind was to somehow, some way, create enough clearinghouses so that their combined subject scopes would cover all facets of the broad field of education. How could one cut the educational pie? The problem was complex. It was not merely a matter of money. It was also one of definition, emphasis, OE interests, and the availability of appropriate centers of excellence to house the clearinghouses. The whole question was almost unsolvable. No matter how one cut the pie, it did not come out right. Another complexity was the fact that the field of education itself shifted in specific emphases. This simple description is, in itself, only a glimpse of the very tip of that iceberg of complexity.

In June 1966, Burchinal had stated that if funds became available, he had a list of six additional areas for new clearinghouses.[12] In September he received the go-ahead signal for funds availability when the OE Internal Review Committee (IRC) approved ERIC's program plan.[13] There were other thoughts on the subject, in the form of internal memos, which listed a wide variety of possible subject areas. Toward the end of 1966, however, Central ERIC's thinking became more solidified. When the RFP was issued for another round of competitions, the list was fixed on the following areas:

1. Educational Media and Technology
2. Basic Learning
3. Library and Information Science
4. English
5. Higher Education
6. Arts
7. Educational Facilities
8. Economics of Education

In accordance with established procedures, ERIC held a bidder's conference on January 27, 1967, and again the world of education displayed substantial interest in the concept of ERIC, with 75 people attending, representing 57 organizations.[14] Then followed the usual submission of proposals (which were due March 1), the long proposal review process, and finally the selection of winning proposals. OE announced the new clearinghouses in a news release dated July 20. (See Figure 3 below.)

UNIVERSITY OR ORGANIZATION	CLEARINGHOUSE	DIRECTOR	AMOUNT	START DATE
National Council of Teachers of English	Teaching of English	Bernard O'Donnell	$209,189	June 1, 1967
University of Minnesota	Library and Information Sciences	Wesley Simonton	$129,082	June 1, 1967
Stanford University	Educational Media and Technology	Wilbur Schramm	$518,588 (3 years)	June 28, 1967
University of Wisconsin	Educational Facilities	John Yurkovich	$169,529	June 30, 1967
University of Illinois	Early Childhood Education	Brian W. Carss	$139,695	March 1, 1967
Syracuse University	Adult and Continuing Education	Roger DeCrow	$148,934	June 1, 1967

FIGURE 3: CLEARINGHOUSES SELECTED AFTER SECOND WAVE OF COMPETITIONS

The eighteen clearinghouses, fashioned from responses to the set of RFP's, constituted the bulk of the system's clearinghouse structure. For, aside from the formal RFP procurement procedure, only three additional "new" clearinghouses came into being. They were:

UNIVERSITY OR ORGANIZATION	CLEARINGHOUSE	DIRECTOR	START DATE
George Washington University	Higher Education	Carl J. Lange	Sept. 1, 1968
University of Colorado	Social Science Education	Irving Morrissett	May 1, 1970
Educational Testing Service	Tests, Measurement, and Evaluation	Henry S. Dyer	May 1, 1970

If the clearinghouses had remained stable in their titles and scope coverage, if they had maintained their individuality without being combined with another clearinghouse, and if they had stayed in the same location, it would be a simple matter to compose one list and always refer to it for easy reference. Unfortunately, none of these conditions were true. The whims of funding levels, educational changes, and the necessity for open competition all played havoc with stability. The details of all these changes are cached in widely scattered documents, from which information was gleaned to record the following situations:[15]

1. *Clearinghouse for Educational Facilities*

   This activity was created June 30, 1967, first with John Yurkovich as director, then Howard Wakefield. After much soul-searching, Central ERIC management decided to discontinue the clearinghouse as of the end of December 1969; however, during the final negotiations, Burchinal agreed to provide limited "close-out" funding until June 1970. Following that date, the Clearinghouse for Educational Administration, at the University of Oregon, agreed to assume responsibility for the subject of educational facilities. Shortly thereafter, the Oregon University based function changed its title to the Clearinghouse on Educational Management, to reflect the broadened scope.

2. *Clearinghouse for Library and Information Sciences*

Originally established at the University of Minnesota, with Wesley Simonton as director, this clearinghouse was shifted, during March 1970, to the American Society for Information Science, Herbert R. Koller becoming director. Then, during an open competition during 1973, the clearinghouse was combined with the Clearinghouse on Educational Media and Technology, and its name was changed to Information Resources. This competiton was won by Stanford University where the clearinghouse resided for a three-year period, January 1, 1974 through January 1, 1977, with Lewis Mayhew as director. Another competition, held during 1976, completed this confusing picture. This time Syracuse University submitted the winning proposal, with contract starting date as of January 1, 1977. The new director was Donald P. Ely.

3. *Clearinghouse on Adult and Continuing Education*

Established June 1, 1976, at Syracuse University, this clearinghouse had Roger DeCrow for a director, then Stanley M. Brabowski. During 1973 the contract underwent a competition in combination with the Clearinghouse on Vocational and Technical Education to form the new Clearinghouse on Career Education. It was Northern Illinois University which won this competition, the new director being David V. Tiedeman. However, the Career Education facility stayed at Northern University for only three years (September 1, 1973 to September 1, 1976). Another competition, another winner. This time the prize went to Ohio State University (which, of course, was the scene for one of the original parts of this clearinghouse). So, as of September 1, 1976, the Clearinghouse on Adult Education became located at Ohio State, with Joel Magisos, then Marla Peterson, then Wesley Budke, as director.

4. *Clearinghouse on Teaching of Foreign Languages and the Clearinghouse for Linguistics and Uncommonly Taught Languages*

Kenneth W. Mildenberger was director of the former; A. Hood Roberts, director of the latter. During 1971 Central ERIC decided to combine the scopes of these two clearinghouses under one roof: the Clearinghouse on Linguistics. The competition was won by the Modern Language Association, with contract start date of June 1, 1971. Three years later another competition resulted in a turn-about, this time the Center for Applied Linguistics acquired the contract for the Clearinghouse on Languages and Linguistics, beginning June 1, 1974. First the director was A. Hood Roberts; he was succeeded by Peter A. Eddy.

5. *Clearinghouse on Reading and Clearinghouse on Teaching of English*

The former was located at the University of Indiana, James Laffey, director; the latter at the National Council of Teachers of English, Bernard O'Donnell, director. Toward the close of 1971, Central ERIC combined these two organizations into one: the Clearinghouse on Reading and Communication Skills, and ran a competition in early 1972. The Council won the contract, which became effective May 31, 1972. O'Donnell continued as director of the combined entity.

6. *Clearinghouse on Preparation of Urban School Personnel*

The original contractor was City University of New York. After several years of operation, the concept of this clearinghouse was changed with a redesignation of the Clearinghouse on Teacher Education. The host institution being the American Association of Colleges for Teacher Education located in Washington, D. C. Joel L. Burdin became director of the clearinghouse when it opened its doors on June 20, 1968.

7. *Clearinghouse on Disadvantaged Children and Youth*

Yeshiva University was the original host institution; however, a shift in location of this activity occurred when its director, Edmund Gordon, transferred to Columbia University. As of September 1, 1968, the activity changed its name to the Clearinghouse on the Disadvantaged; later, another title change made it the Clearinghouse on Urban Education.

The above changes in clearinghouse locations or combinations represent a mere recitation of factual events. But what about the reasons for the changes? The answer was fairly straightforward in the case of competitions. Writing proposals is a truly competitive enterprise, and although difficult, it was certainly possible for a non-incumbent to assemble the operational facts, engage top quality personnel to write a sparkling proposal, and establish a very reasonable budget, all of which can persuade the proposal reviewers into passing over the incumbent.

Reasons for other changes were somewhat more complicated, less definitive, and probably occurred as a result of one or more of the following reasons:

1. Unsatisfactory or questionable performance.
2. Changes in the field of education.
3. New Congressional directions or emphasis in education.
4. Limited funding levels for ERIC.

There was only one other significant contractual change which should be mentioned in this context, although it was entirely unrelated to the clearinghouse structure. As a result of a competition, the National Cash Register Company, Microcard Division, of Rockville, Maryland, became the new EDRS contractor and began formal operations as of January 1, 1968. This changeover was somewhat traumatic because the new EDRS, under the leadership of Charles Koppa, ran into considerable problems attempting to start up operations, achieve a satisfactory status of quality control, and maintain any degree of a satisfactory schedule to keep up with the increasing demand for microfiche.

At the September 16-18, 1968 directors' meeting, Koppa discussed his company's plight. He indicated that the then current volume of microfiche reproduction was about four times the level that was anticipated when the contract was awarded. In April 1968, it became obvious that substantial added capacity was needed; unfortunately, in the infant microfiche industry there were not stock systems to handle extremely high volume production, and the lead time to manufacture such equipment was about four months. At the end of August, the National Cash Register Company installed the new equipment and immediately began to run it on a double-shift operation. He was hopeful, he reported, that his company could catch up on the delinquent standing order backlogs toward the end of 1968. Nevertheless, EDRS operational problems continued to plague Central ERIC managers and ERIC customers.[16]

Plans and Budget Issues, FY 1968 and 1969

During 1966, ERIC achieved a significant stamp of approval when OE was invited to appoint a member to the Committee on Scientific and Technical Information, more popularly referred to by its acronym, COSATI. This was a committee of the well known Office of Science and Technology, headed by a Presidential Advisor. COSATI membership included all of the important information activities in the Washington bureaucracy. OE membership (Burchinal was named to the post) was prestigious for ERIC, particularly when he became Chairman of the Panel on Education and Training.

COSATI's general purposes were to keep track of all information functions in the Federal establishment, discuss problems relating to them, and make recommendations for improvements. The committee was particularly interested in assembling budgetary and operational plans so as to work in conjunction with the Bureau of the Budget in an attempt to provide an overseer function and avoid duplication of information efforts. To this end, in the Fall of 1967 COSATI asked Burchinal for a description of ERIC's budget and operations planned for fiscal years 1968 and 1969. His response, compiled during October 1967, provides a convenient status report of where ERIC was at that moment and, more important, where he wanted it to go in the next two years.[17]

Although the budget increased from about 2 million in FY 1966 to a request for 3.1 million in FY 1969, ERIC responsibilities and requirements were mounting rapidly. It was doubtful, Burchinal thought, that the planned budgets would be sufficient. For example, ERIC had intended to provide quick access only to all reports which the OE research projects generated. But by FY 1968 the Office had dramatically increased funding for the Regional Educational Laboratories, which would undoubtedly result in a significantly increased number of such reports. In addition, the Bureau of the Budget had heard about ERIC and had issued a mandate to OE that ERIC should not only make available all OE reports (research-related as well as non-research) from OE bureaus other than the Bureau of Research, but ERIC should also make available all education-related reports from all appropriate Federal agencies. ERIC thus became obligated to be a truly Federal education information activity; it was no longer merely an OE activity.

This additional burden of responsibility could not go unnoticed. Therefore, effective July 1, 1967, the "R" in ERIC was changed from *"Research"* to *"Resources"*. However, as a personal preference, Burchinal did not want to change the name of the monthly publication from *Research in Education* to *Resources in Education*. He did not think it was a desirable or meaningful name. That change, there, did not come until January 1975, long after Burchinal was out of the ERIC picture.

Burchinal calculated that expanded document acquisition efforts would increase ERIC workload at least fourfold. Additionally, the increased document flow would magnify clearinghouse requirements for bibliographies, review articles, interpretive summaries, and other items classified as information analysis products. These were costly. In view of this expanded workload, Burchinal felt that ERIC, as the only information system in education, was not getting its full share of financial support. Look at the National Aeronautics and Space Administration, he pleaded, where the technical information services function received about .6 percent, or 28 million of the overall NASA budget of 5 billion. ERIC, however, got only about .07 percent of the OE budget of 4 billion. Burchinal felt very strongly that OE should provide additional support to ERIC so as to facilitate the development of local, state, and regional dissemination activities. *"Without ERIC and its services,"* Burchinal wrote, *"each State, each Regional Laboratory, each of the 21,000 local districts, and thousands of R&D personnel, administrators, creative teachers, and other professional personnel will continue their individual, inefficient, tedious, time-consuming, and costly searches for desired information."*

Burchinal was fully cognizant that requests for significant budget increases must be accompanied by specific, detailed justification, so he listed several:

1. *Additional Clearinghouses*

"There are major gaps," he stated, *"in ERIC's information services because there are no clearinghouses on important topics. Among these are arts, humanities, physical health and recreation, social sciences, many areas of higher education, and international education."* Also, because of the anticipated emphasis on acquisition efforts, all existing clearinghouses would have to be funded at higher levels.

2. *Journal Literature*

The first objective of ERIC had been to make the report literature easily available to the educational world. However, persons using the ERIC system rightfully complained that the rich literature of educational journals was not available in the system. However, any desire on the part of ERIC to become involved with this literature had to be handled gingerly because of the existence of *Education Index*, which had been in existence since the 1920's. Therefore, Central ERIC let a contract to Herner and Company to study the existing bibliographic control over journals. Preliminary information from Herner already prompted Burchinal to declare: *"The study has revealed how chaotic access to journal literature is in education. There are no comprehensive abstracting services as in the natural sciences. Few journals are abstracted in any subfield in education. Indexing is erratic."* Burchinal was then not too sanguine about obtaining enough OE money to launch such a large project. At that moment, in the Fall of 1967, he was contacting other parts of HEW as well as some professional organizations to determine if anyone were interested in sharing the costly burden for such an enterprise. Although Herner's final report was not yet written, Burchinal had received enough preliminary signals to allow him to request future funds for the development of an index to educational journals.

3. *File Maintenance*

Burchinal calculated that document input into the ERIC file would increase from 4,000 per year to 10,000 or 15,000 per year.

Such a magnitude of documents would require considerable extra cash for the printing of RIE, microfiche reproduction at EDRS, and preparation of the computer file.

4. *Information Analysis*

Burchinal was a firm believer in the utility of information analysis. *"Arrangements must be made,"* he stated, *"to provide integrated summaries of research in the language teachers or other nonresearch oriented specialists can understand. The clearinghouses are engaged in a limited extent in producing interpretive summaries. Additional funds, however, are required to provide the numbers and types of reports needed."*

5. *Films and audio-visual materials*

A consultant report submitted to the Assistant Secretary of Education had recommended that a Federal clearinghouse for such materials should be established as soon as possible. Burchinal wanted to acquire funds to work such an activity into the ERIC system. This was another indication that Burchinal was continuously hopeful, often zealous, in seizing any logical venture to enhance ERIC and his organizational activity. Parenthetically, it should be noted that throughout ERIC's history there were several discussions about the possibility of ERIC getting into the business of controlling nonprint materials. For many reasons (the most notable being that another organization took over this function) ERIC never seriously considered a nonprint file after this date.

6. *Research and Development on ERIC*

Burchinal was well aware of the old bureaucratic axiom that if you want to go into a new enterprise, expand an existing program, or evaluate the worthwhileness of an existing activity, the best way to do it was to have an outside commercial or professional contractor study the situation and make impartial evaluations.

> Therefore, Burchinal was interested in initiating research and development projects on systems design, including user requirements studies, the analysis of needs for different kinds of information products, the development of specifications for packaging information, and the evaluation of the overall ERIC system and the related role of dissemination. His reasoning sounded pure: *"As the investment in the ERIC system grows, careful attention must be given as well to tailoring system design, products, and services to the needs and resources of users and for continuous evaluation of the effectiveness of the system."*

The above requirements, submitted to COSATI, served as a practice session for the many additional budget documents and internal managerial moves which Burchinal, Clemens, and the ERIC management team made during the succeeding months. These efforts were eminently successful. For although the initial aim was a budget trend from 2.0 million in 1966 to 3.1 million in FY 1969, the actual figures allocated during ERIC's ascending budget picture were as follows:

FY 1966	FY 1967	FY 1968	FY 1969	FY 1970
$1,999,320	$3,056,694	$2,896,281	$4,750,000	$4,626,128

A serious budget crunch did occur during FY 1971, when the budget was reduced to $3,815,000, but that is another story.

Status Report, January 1969

From his seat as overseer of the fortunes of ERIC, Burchinal was continuously peering at the landmarks of progress which ERIC reached from time to time. ERIC was constantly on his mind: how to justify its existence, how to impress his superiors with facts about it, and how to take advantage of the opportunities to acquire more money for it. He grasped at all statistics and facts he could find and quickly wove them into some tapestry of a presentation, budget document, or speech to suit the immediate need. In fact, all the professionals in the office vividly remember that Burchinal often could not wait for the orderly scheduled flow of statistics from the field: as soon as the fiscal or calendar year ended his staff was on the phone to the clearinghouses, EDRS, and the Facility so as to acquire the data in raw form, add the figures, and manipulate them into charts and graphs. Then place them on Burchinal's desk.

On one such occasion, during January 1969, Burchinal took stock of ERIC's progress in a format which responded to a list of four "initial objectives":[12]

- To make unavailable or hard-to-find, but significant research and research-related reports, papers, and other documents easily available to the educational community.
- To prepare interpretive summaries of information from many reports for use by educational decision-makers and practitioners.
- To strengthen existing educational research dissemination channels.
- To provide a base for developing a national education information network that can effectively link knowledge producers and users in education.

Although these objectives were somewhat more "retrospective" than "initial," one could not blame him for some managerial license. After all, they could rightfully find a foundation in fact in the preliminary papers prepared prior to the organization of the system. Each objective was fleshed out with facts and figures in this interesting status report:

1. *Making Reports Available*

After the first issue of RIE appeared in November 1966, with a total of 67 abstracted and indexed documents, it kept growing with each issue; in January 1969 the monthly publication already contained 913 documents. These reports emanated from a variety of sources, including the Bureau of Research, other bureaus in OE, various parts of the HEW, the National Science Foundation, the Office of Economic Opportunity, the Department of Labor, the

Department of Defense, the Department of Justice, the National Education Association and other professional organizations, State and local school organizations, and commercial activities. It was clear from this general mix of educational document sources that Central ERIC and the clearinghouses had made rapid progress in their acquisition efforts.

At the end of January 1969, the total ERIC file included 18,254 documents. This total, of course, included the documents in the six "special" collections. The special packages of documents were a significant part of the collection and will probably always retain an historical value. They are listed in Figure 4 below.

DATE	TITLE	NUMBER OF DOCUMENTS
September 1966	*ERIC Catalog of Selected Documents on the Disadvantaged*	1,746
August 1967	*Selected Documents in Higher Education*	845
June 1967	*Office of Education Research Reports, 1956-1965*	1,214
November 1967	*Pacesetters in Innovation, Fiscal Year 1966*	1,075
April 1968	*Pacesetters in Innovation, Fiscal Year 1967*	907
July 1968	*Manpower Research, Inventory for Fiscal Years 1966 and 1967*	393
	TOTAL	6,180

FIGURE 4: ERIC SPECIAL COLLECTIONS

Another yardstick for measuring RIE was the number of its subscribers. In January 1967 there was only a handful: 209; yet at the end of December 1968 that total had swelled to 4,422. Beyond that, ERIC itself distributed over 1,000 copies free to State libraries, Federal agencies, and some colleges and universitites which offered doctorate degrees in education. More than just the numbers of subscribers, it was also important to know who those subscribers were. These are indicated in Figure 5.

TYPE	NUMBER	PERCENT
Higher Education Institutions	1,532	34.6
Local School Districts	1,289	29.2
State Education Agencies	124	2.8
Individuals	478	11.0
Commercial Organizations	346	7.8
Foreign	286	6.4
Federal Agencies	78	1.7
Nonprofit Organizations	239	5.4
Other	50	1.1
TOTALS	4,422	100.0

FIGURE 5: NUMBERS AND TYPES OF SUBSCRIBERS TO RIE IN DECEMBER 1968

Not only did RIE have a good representative distribution among the *types* of users, but its geographic distribution appeared equally attractive. For example, RIE was being purchased by institutions of higher education in *all* of the States except North Dakota. Subscriptions also arrived from 40 foreign countries, including 165 from Canada, 30 from Great Britain, 14 from West Germany, and 7 each from Franch, Israel, and New Zealand. At least one subscription came from each of the following:

- Australia
- Belgium
- Bolivia
- Ceylon
- Chile
- Columbia
- Denmark
- Dominican Republic
- Ecuador
- Egypt
- Eire
- Finland
- Guatemala
- India
- Ireland
- Italy
- Japan
- Kenya
- Lebanon
- Mexico
- New Guinea
- Netherlands
- Norway
- Philippines
- South Africa
- Samoa
- Singapore
- Spain
- Sweden
- Switzerland
- Tanzania
- Thailand
- USSR
- Venezuela

This was indeed an impressive display of interest for a publication which had been in existence for only a little over two years. In fact, quite unexpectedly remarkable.

Subscription sales were one thing, but what about the basic premise of "making reports available" to the educational public? Were the subscribers interested in anything but the indexing-abstracting publication? They certainly were. The most obvious measurement was the sale of microfiche. During the first full year of RIE publication, 1967, EDRS had sold 1,187,000 microfiche. In 1968, however, this jumped to the almost unbelievable total of over 6,000,000. Far beyond anyone's expectation. This latter total amounted to 3,500,000 titles (at that time the documents in RIE averaged about 70 pages, or 1.4 microfiche). "Hard copy" or paper sales, on the other hand, were surprising low, only 33,000 titles during 1968. Obviously, microfiche were being heavily preferred to hard copy. The fiche were far cheaper and so much easier to store and handle than Xerox copies. Apparently, although this was purely an assumption, the users were not objecting (at least not strongly) to using the microfiche and the microfiche readers.

It should be clearly understood that most microfiche sales occurred through automatic monthly distribution based on standing orders which were dispatched each month from EDRS. In fact, only about four percent of the microfiche distributed during 1968 were based on individual title requests. At the end of 1968, EDRS was responding to a total of 186 standing orders for all of the documents in RIE. But were the microfiche actually being used? How many people were reading how many microfiche. What effect was this usage having on education: Or were the microfiche just sitting there in microfiche cabinets in some corner of the library? Worse yet, were the shipping boxes from EDRS unopened, still languishing on the schedule of some harried librarian, too busy to file them? These were the unanswerables---some of them imponderables. These questions would continue to plague ERIC managers, even though at a later date some partial answers would be forthcoming.

2. *Interpreting and Summarizing Information*

Burchinal felt that the interpretation and summarizing functions of ERIC rested on three categories of activity:

- newsletters,
- bibliographies,
- interpretive summaries.

At first glance one might think such a lofty opinion of newsletters was not justified. However, in addition to carrying announcements about ERIC products, ERIC procedures, and new developments, almost all of the clearinghouse newsletters contained short reviews of research and research-related issues on critical educational topics to which were appended bibliographic references to pertinent documents in the ERIC file. Eighteen clearinghouses issued newsletters which reached a total of 70,000 addresses, an average of about 3,800 for each clearinghouse mailing list.

During 1968, the admonitions of Central ERIC managers, both in annual review sessions and at directors' meetings, had paid off in the publication of increasing numbers of information analysis publications. Thus there was a shift from the simpler publication of bibliographies to analysis reports, interpretive summaries, state-of-the-art reports, and the like. In FY 1968 the system produced 149 "products," mostly bibliographies. In the first six months of FY 1969, however, a total of 167 products appeared and there was a noticeable trend toward the true information analysis publications. All of these, of course, were entered in RIE and the data base.

3. *Strengthening Existing Communication Channels*

Most of the clearinghouses prepared newsletters, interpretive summaries, or journal columns for publication in some professional association publication (newsletter, journal, announcement, or whatever). For example, at an early date the Clearinghouse for Junior Colleges came up with comprehensive analytical summaries for outlet through the American Association of Junior Colleges. All told, 13 clearinghouses had worked out similar arrangements with professional organizations for a total involvement of 36 publications of various kinds. Each of these ERIC columns or reviews included information about ERIC in general as well as specific products or services of the clearinghouse. Included also were a short summary or review of developments on a critical topic, plus a bibliography of recently announced ERIC documents. Thus, by using exisitng professional association publication vehicles, with established audiences, the clearinghouses were engaging in an effective dissemination program, all at relatively little Federal expense. Some of the major publication editors began to build their own ERIC columns, such as *American Education,* the *NEA Journal,* and the *American Vocational Journal.* Together, these three journals reached an estimated 1,075,000 educators monthly.

Somewhat similarly, Burchinal felt that the clearinghouses were making valid contributions toward strengthening the dissemination programs of professional organizations. For example, many of the clearinghouses helped professional organizations develop procedures so that significant papers presented at national educational conferences were not lost. In one way or another the clearinghouses collected the papers from authors or presenters and made them widely available through the ERIC system. Then, too, the clearinghouse personnel conducted workshops or training sessions at conferences to explain what kinds of materials were in ERIC and how to gain access to them. Clearinghouse representatives also helped to unify and broaden professional association bibliographic enterprises and assisted authors in compiling sources and references for their presentations or published articles. Beyond the support to professional organizations, the clearinghouses gave valuable assistance to OE-sponsored activities, such as background materials for the Mexican-American education conference as well as playing a similar supportive role to the OE laboratories and some of the educational functions of various States. Professional educators were receptive to professional assistance. Who would turn it down once they knew it was available? And, of course, the dissemination function was working through the basic exchange that took place when people called or wrote the clearinghouses and asked questions, either bibliographic or factual. All these activities served the general propostion of dissemination.

But much of the above information is only broadly descriptive. What about specifics? Exactly how were the ERIC customers using the data base? Burchinal managed to collect a few hardcore examples:

- A team from the American Institute of Research spent two weeks at the Media and Technology Clearinghouse to compile a bibliography on literature relating the media to instruction for the disadvantaged.
- A researcher spent one week at the Clearinghouse on the Disadvantaged to assemble information for a report to the Superintendent of New York on experimental programs to improve educational acheivements on the part of inner-city children.

- A representative of a tenants' association researched for about five days in a clearinghouse to gather information on the development and operation of residential schools.
- State Department of California personnel used the services of the Clearinghouse on Rural Education and Small Schools for an entire week to develop a bibliography on migrant education which they said would otherwise have taken "a month or a year or more" to develop if the ERIC services had not been available.
- A research team searched clearinghouse resources for two weeks in the process of developing evaluation criteria for the review of educational programs for disadvantaged and migrant children.
- A university professor devoted a week's research at the Clearinghouse for Educational Administration to develop background information on school boards.
- Researchers from the Ford Foundation Task Force on Interdisciplinary Study of Reading Problems used the data residing at the Clearinghouse on Reading for its in-depth search of the literature on that subject.

4. *Providing a Base for a National Network*

Everything involved in ERIC was intended to contribute to the ultimate educational information network. But most effectively, all information about education should be available through local, handy, easy-to-use information centers. These centers should be the front-line depositories of ERIC materials. They would also need a collection of journals, basic reference books, a good set of commercial publications, and a staff well trained in using such materials. The outlay of funds for such an organization would be minimal and theoretically available to any local school districts as well as State education agencies.

Therefore, after the basic elements of ERIC began to function, Burchinal had begun to design improvements and additional elements of information progagation to contribute to the operational efficiency of the local information centers. At this point in time, February 1969, some of his plans included the following:

- Provision for lending ERIC tapes to any information activity or group so they could duplicate the file and perform searches with their own computer.

- Development of an on-line interrogation of the ERIC file through remote terminals.

- Distribution of materials on how to use ERIC. (ERIC managers were well aware that because of the vocabulary, because of the coordinated indexing of terms, the proper usage of ERIC was not as easy as the card index system of the routine university library.)

- Publication and distribution of reference and operational manuals for use in local information centers.

- Establishment of training programs for the staffs of local centers.

- Support for development of information and dissemination capabilities with State departments of education.

Clearly, within the space of two and one-half years (from July 1966 through December 1968) the ERIC system had made great strides. The foundation of operations became well established during this period. The framework of ERIC's organization became clearly visible. From this point forward there would be alterations, additions, replacements in the superstructure, but the most notable change would be growth and improvement.

CHAPTER V. CHANGES, CRISES, AND ASSESSMENTS, 1969-1972

Although the 1969-1972 period for ERIC contained several crises and assessments, it would be incorrect to imply these considerations were total preoccupations. The operational pot was always boiling; a dozen things were always going on at once.

At the beginning of this period the North American Facility, at Central ERIC's urging, was in the throes of moving from the Los Angeles area to the Washington, D. C. area. The physical move required considerable coordination on a system wide basis and probably was effected with much less trouble, less disruption of schedules, than anticipated. As of March 1, 1969, the move was completed and the thirty-two people involved in the ERIC Facility operation were settled in their new quarters in Arlington, Virginia[1]. This move made much easier the managerial life of Eller, then the Facility project officer for ERIC, as well as that of Richard McCord, the new North American project manager.

But just as North American had placed itself into a good operative geographical position, it became involved in a competition for the contract it had held since 1966. It lost. Effective January 1, 1970, the new contractor taking over this important function was Leasco Systems and Research Corporation (formerly Documentation Incorporated). Central ERIC then became preoccupied with the thousand and one things required to effect the change. Fortunately, the energy and adroitness of the Leasco staff made the changeover relatively painless.

It was during this time frame that several clearinghouses came into being or were changed. Then too, all during this period the ERIC tape developments were going on, the ultimate goal being to provide easy, cheap, and quick access to the ERIC file through computer interrogation*. Another item of occupation was the "bulls-eye" project, designed to give greater impetus and direction to ERIC's information analysis program**.

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*See Chapter IX.

** Also see Chapter IX.

Among the many other diverse and sundry operational matters crying for attention in Central ERIC was acquisitions. Outside a few exceptions, Central ERIC had reserved for itself the responsibility for acquiring documents from Federal agencies. For several years various people on the management staff had attempted to handle this matter on a catch-as-catch-can basis; yet unfortunately, this time-consuming task always became sublimated in the constant rush to extinguish a system brush fire or to handle some unexpected other long-term project. Thus, acquisitions remained a constantly abrasive predicament until, in mid-1971, Central ERIC made contractual arrangements with the Facility, which could then assign enough time and attention to this matter*.

Perhaps the most significant operational activity occurring during the 1969-1972 period was the signing of a contract with CCM Information Science, Inc., an independent subsidiary of Crowell, Collier, Macmillan Company, of New York City, to incorporate journal literature into the ERIC data base. This action had been on the launch pad for several years, but it needed the examination and justification of the Herner study, then careful budgetary planning, before ERIC managers could get the project off the ground. Finally an RFP was issued in the late Summer of 1969, and the first issue (dated January 1969) of CIJE came off the press a few months later**.

In addition to these specific items, the Central ERIC managers were always involved in the continuous day-to-day routine of monitoring system operations as well as accomplishing more periodic site visits, annual review sessions, and contract continuation, the latter always requiring the submission of a formal proposal and budget, both of which almost always meant negotiation efforts.

So, system functions, changes, and new directions were also occurring during the 1969-1972 period. But the crises and assessments grabbed the spotlight of attention. First, however, came the important matter of reorganization.

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*See Chapter VIII for the acquisitions story.

**The details of the CIJE publication appear also in Chapter VIII.

Reorganizations

On August 22, 1969, the new Commissioner of the Office of Education, James E. Allen (he had assumed his duties on May 1, 1969) formally announced a reorganization. The news release pointed out that the OE staff had tripled in size since the early 1960's and that OE was now responsible for the administration of an annual budget of over 4 billion. *"The new changes in organization,"* Allen said, *"will assure better means of supervising and coordinating the functions of the bureaus and divisions which carry out the numerous functions assigned to the Office."* [2]

Under this new organizational plan a large portion of the old Bureau of Research became the new National Center for Educational Research and Development, which was placed under the organizational umbrella of the Deputy Assistant Secretary/Commissioner for Planning, Research and Evaluation, with James J. Gallagher as the Deputy Assistant Secretary. Three offices came under Gallagher: The National Center for Educational Statistics, the Office of Program Planning and Evaluation, and the Office of Information Dissemination. Allen singled out Gallagher's office as being particularly significant: *"Of special importance is the coordination provided under the new organization for the development of more effective leadership of the office in research, planning, and evaluation. Under this arrangement it will be made to encourage more effective linkages within the educational system among the processes of research, development, evaluation, demonstration, and dissemination as a means of accelerating the widespread application of improved methods and practices."* [3]

Then, during succeeding months, in the Fall of 1969, various administrative announcements appeared which implemented the new OE reorganization: functional changes and the appointment of new personnel. One of these, dated October 24, named Burchinal as Acting Assistant Commissioner of the newly established Office of Information Dissemination. [4] It had been made clear that *"...this office would be responsible for providing a locus of responsibility for the planning and coordination of all information dissemination activities in OE."* [5] On paper, at least, Burchinal had achieved what he had stumped for in his briefing to the OE administrative staff way back in October 1965. When a huge, formal, detailed OE organization chart appeared on February 15, 1970, Burchinal's immediate organizational world appeared as indicated in Figure 6.

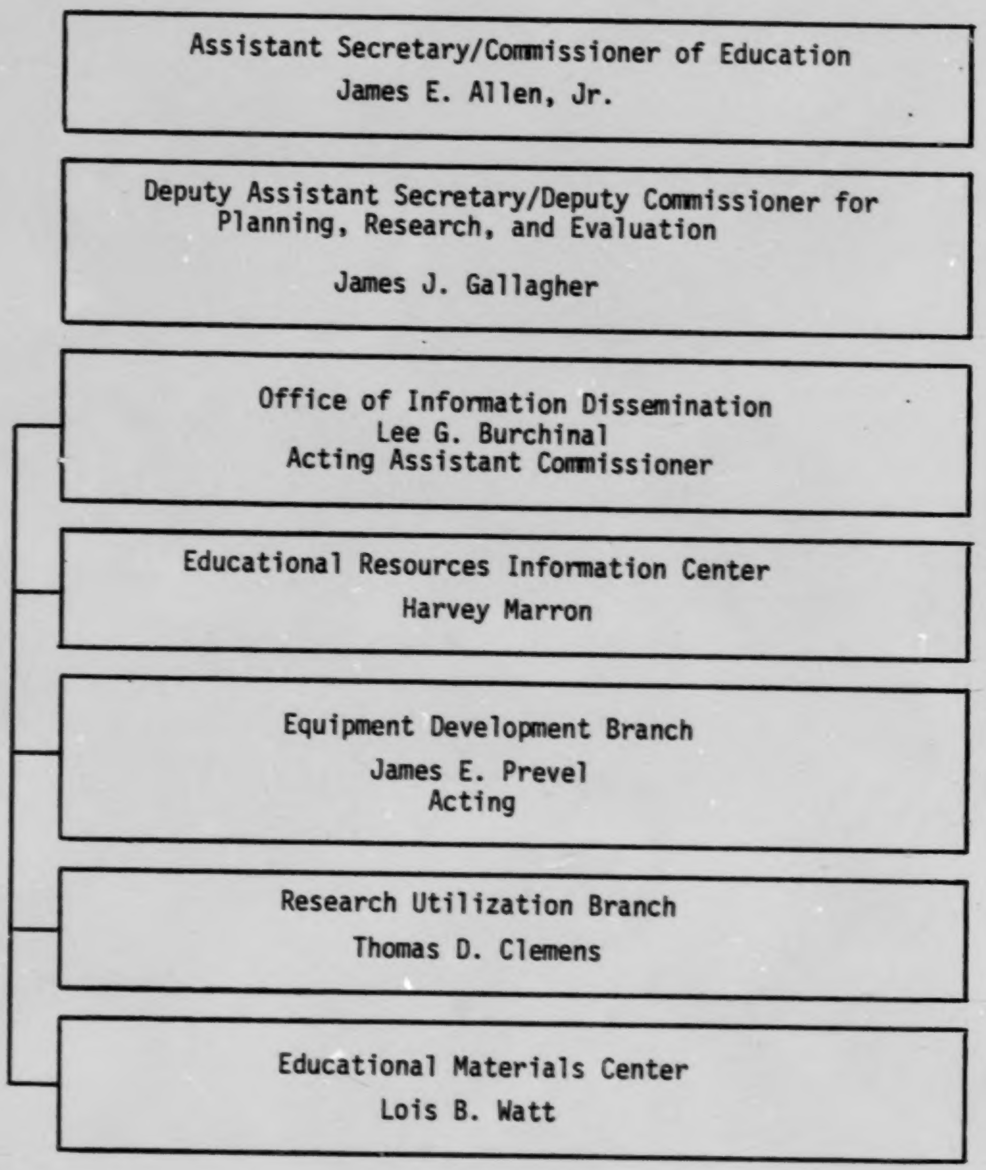
Assistant Secretary/Commissioner of Education
James E. Allen, Jr.
Deputy Assistant Secretary/Deputy Commissioner for Planning, Research, and Evaluation
James J. Gallagher
Office of Information Dissemination
Lee G. Burchinal
Acting Assistant Commissioner
Educational Resources Information Center
Harvey Marron
Equipment Development Branch
James E. Prevel
Acting
Research Utilization Branch
Thomas D. Clemens
Educational Materials Center
Lois B. Watt

FIGURE 6: ORGANIZATION OF THE OFFICE OF INFORMATION DISSEMINATION, FEBRUARY 15, 1970

At the October 28, 1969 ERIC Directors' Meeting, the organizational changes were so new that Burchinal had not yet had enough time for reflecting about what part the clearinghouses (or indeed, ERIC in general), would play in the overall scheme of things. However, he did briefly discuss the new organization when he told the directors that the Office of Information Dissemination would seek to facilitate change through dissemination and application of research for local use. The new OE concept, Burchinal continued, was to develop systems which would lead to change---behavioral change in education. ERIC already provided one important element in this process with its contribution of a knowledge base. But this in itself was not sufficient. Burchinal wanted to build on the clearinghouse experience, and thought at least one area which could be expanded was the information analysis program.

To provide a catalyst for possible refinement, redefinition, and possible expansion of this activity, Burchinal asked the directors to make a thorough survey, a state-of-the-art report of their information analysis programs. Their reports should consider new research, new audiences to be reached, as well as new programs for OE to consider[6].

Burchinal considered strengthening the information analysis program so important that he decided to convene a special directors' meeting at which that subject would consume the entire agenda. The meeting was held December 17-18, just two months later, and the participants thoroughly discussed the information analysis program and its relationship to the overall theories of dissemination. These exchanges of views were intended to sharpen and strengthen directors' perceptions for their preparation of their information analysis surveys[7].

About six months later, when the clearinghouse sent in their surveys, neither Burchinal nor Clemens felt that, as a whole, they had hit the mark; in fact, both men criticized the directors' efforts. Something had happened to alter the degree of expectation on their part, or the clearinghouse perceptions on the part of the directors. All clearinghouse budgets were amended to provide an additional $5,000 for information analysis products. But from Burchinal's and Clemens' viewpoints, the exercise had not been a valuable one.

In the meantime, before the Office of Information Dissemination really had a chance to settle down as an entity, its designation changed to the National Center for Educational Communication (NCEC). This became effective May 4, 1970. At still another directors' meeting, on June 10, 1970, Burchinal succinctly outlined the objectives of NCEC:

1. Assure access to the knowledge base of education.
2. Provide interpreted information.
3. Strengthen State and local education agencies.
4. Accelerate the spread of exemplary practices.
5. Make research and development products available.
6. Develop and verify communications systems[8].

Very shortly thereafter, Burchinal's staff prepared a chart which showed the construction of his new organizational entity. Because this represented something of a high-water mark in Burchinal's tenure with OE, because his responsibilities had now become broader than just ERIC, and because many of the individuals in NCEC worked directly or indirectly with ERIC at one time or another, the following Figure 7 represents both an organizational and staffing chart for one point in time: May 1970.

Such a list of names, along with their positions, was only an ephemeral notation: there were constant changes. Perhaps, however, the most notable change occured in February 1970, when Charles Hoover replaced Marron as Chief of ERIC*.

Hoover had a valuable ten years of administrative experience in the public schools of Pennsylvania and Delaware, had spent about six years in the Montgomery County, Maryland, public schools and the National Science Foundation in the field of computer technology, and arrived at OE in 1968 to help establish and operate the Project Grant Information System. The latter was an elaborate computer system which OE had developed and installed to control the extremely large number of grants it issued every year. His

---

*Actually, Hoover was Acting Chief until August 1970, when the "Acting" was removed.

Office of the Assistant Commissioner

Assistant Commissioner	Lee Burchinal
Administrative Officer	Raymond Lawrenson
Secretary	Dorothy Joy
Secretary	Joy Burgess

Copyright Administrative Staff

Copyright Administrator	Morton Bachrach
Secretary	Barbara Saunders

Practice Improvement Division

Director	Thomas Clemens
Secretary	Eliza Felton
Program Associate	Richard Elmendorf
Research Associate	Mildred Thorne
Research Associate	(Vacant)
Program Assistant	(Vacant)
Secretary (Typing)	Daisy Minor

Information Resources Division

Director	Harvey Marron
Secretary	Shirley Datcher

Educational Resources Information Center

Chief	Charles Hoover
Non-print Materials Officer	James McPherson
Lexicographer	James Eller
Clearinghouse Coordinator	Frank Smardak
Technical Information Specialist	Delmer Trester
Technical Information Specialist	Catherine Welsh
Clearinghouse Assistant	Patricia Sullivan
Program Assistant	Rosalie Spence
Secretary	Mildred Chase
Secretary	Loretta Williams

Educational Reference Center

Chief	(Vacant)
Librarian	Charles Missar
Program Assistant	Frank Bryars
Secretary	Virginia Williams

Educational Materials Center

Chief	Lois Watt
Curriculum & Materials Officer	Myra Thomas
Library Assistant	Thelma Knuths
Library Assistant	Sidney Murphy
Secretary	Betty Baten
Clerk-typist	Cennie Taylor

FIGURE 7: ORGANIZATION AND STAFFING CHART FOR THE NATIONAL CENTER FOR EDUCATIONAL COMMUNICATION, MAY 1970

background in education, computer science, and information systems made Hoover a natural for Burchinal and Marron to select as the new head of ERIC.

The Budget Crunch, FY 1971

Burchinal was such a staunch supporter of ERIC (he had campaigned so long and so hard to make ERIC operational and then had worked so diligently to improve it) that some people forgot he was also intensely interested in the concept of dissemination. Not only did he believe wholeheartedly in dissemination and have many theories about it, but he also had known that dissemination represented an all-OE concept, and the new NCEC organization with its attendant broadened responsibilities proved he was right. In the near-term achievement of certain dissemination activities, however, he had a basic problem: lack of money.

The first formal revelation of this problem occured at the June 10, 1970 directors' meeting. Burchinal told the assembled directors that there was some prospect of reduced funding for ERIC during FY 1971. He said the problem was that just recently the Senate Subcommittee on Appropriations had reduced the NCEC budget request. *"If this cut stands"*, Burchinal stated, *"the overall ERIC decrease would approximate $700,000"*. Immediately after that announcement Burchinal said he was in the process of forming a management review group, composed of knowledgeable people in the field of education, who would probe into the problems of ERIC management as well as the future levels of support, possible consolidations or even eliminations in the existing clearinghouse structure.[9]

The bombshell of the budget reduction for FY 1971 had severe and long-lasting repercussions. The entire ERIC professional staff engaged in a maelstrom of budgetary activity. Innumerable meetings, brainstorming sessions, informal ideas, memoranda---all and any suggestions on how to reduce the ERIC budget were in one way or another transmitted to Burchinal to assist him in determining the ultimate path to choose. At one time or another at least half of the clearinghouses were under consideration either for elimination or combination with another. At one point, a "general processing clearinghouse" came under consideration as an activity which would pick up all the indexing and abstracting functions for subject areas left over from eliminated clearinghouses. One idea kicked around briefly was to have all indexing and abstracting accomplished in one central spot, the theory being that mass production would effect economies. Another possibility was to make arbitrary reductions across the board: a 20 percent reduction for all ERIC contracts.

Smardak and Trester came up with ideas for eliminations or drastic reductions and passed them on in a memo to Marron*. Marron discussed these with Hoover or Burchinal, then came up with some new ideas and wrote a "think piece" memo to Burchinal. Burchinal discussed these with Marron and Clemens and wrote memos to OE top management. All of it was a painful experience. Someone always appeared to have strong objections to any idea that someone else had to free up a large block of money. Most of these memoranda are still available, but to trace every idea and its subsequent abandonment would only amount to a circuitous exercise. However, some of these budgetary gyrations should be exposed, if only to illustrate the above generalizations.

For instance, at one point, July 10, 1970, Marron prepared a memo for Burchinal which perfectly illustrated the confusing set of circumstances the budget crunch had imposed. Marron's specific problem was to arrive at $4 million level for ERIC in FY 1971. *"In many cases*, he wrote, *"the clearinghouses that are continued into FY 71 will do so at about the same level as FY 70. In some cases, a modest cut is called for. The ERIC clearinghouse Monitors feel that these cuts can be implemented without serious consequences"*. He thought the EDRS contract could be reduced through the discontinuance of some of the ERIC free microfiche distribution. Otherwise, he thought the following steps should be taken quickly:

> "1. *Notify all clearinghouse directors to hold spending down to absolute necessities to allow maximum carry overs.*
>
> 2. *Notify Vocational and Technical Education and Urban Disadvantaged of their ceiling and ask for a budget to meet that figure.*

---

*Trester had joined the ERIC staff on January 15, 1968.

> 3. *Allow Higher Education to use carry over money (they have about $40,000) to continue their operation. In effect, give them a no cost extension.*
>
> 4. *Notify Applied Linguistics and Foreign Languages of our intention to support one Language clearinghouse and ask for their interest in submitting a proposal. Also solicit proposals from other sources. These contracts expire 31 January 1971.*
>
> 5. *Notify Junior Colleges, Rural Education, and Adult Education of our intention to phase them out at the end of their contract period.*
>
> 6. *Solicit proposals to operate a general ERIC Processing clearinghouse. This should be by competitive procurement.*
>
> 7. *Intentions stated in 3-6 above should be staffed through Contracts Office in advance to assure required cooperation." 10*

But at the same time Marron wrote this memo to Burchinal, another memo was under preparation to Burchinal. This one was from William C. Gescheider of the OE Bureau of Higher Education. Gescheider stated:

> *"As we understand the situation, Congressional budget reductions necessitate the National Center for Educational Communication considering an alternate strategy in carrying out its dissemination plans. In order to free money for a variety of planned dissemination activities, the Center is contemplating reducing the total number of ERIC clearinghouses by approximately four."*

Gescheider then referred to the possible merger of the Junior College and Higher Education clearinghouses. The remainder of his memo contained strong arguments against such a move. Gescheider stated:

> *In terms of existing Office of Education objectives, it seems to us that there are other alternatives. At the present time at least, adult education does not have a higher priority in OE and elimination of that activity should be considered. Similarly, areas such as linguistics, the teaching of science, educational media, the teaching of foreign languages, educational facilities, all should be considered for possible mergers and consolidations or elimination in terms of Office priorities." 11*

The above considerations (and many more) were all on Burchinal's mind. Time was running short. Decisions had to be made because clearinghouse contracts and other system obligations were reaching their deadlines.

However, on July 19 he took time out to write a statesmanlike letter to the clearinghouse directors which pleaded for their assistance in helping him solve the budgetary problems.

> *"At the June 10th clearinghouse directors' meeting I discussed funding for ERIC's programs in FY 1971. Budget decisions made since then require a cut of $1.0 million in the ERIC budget. Harvey Marron and I have spent a considerable amount of time discussing the various ways of absorbing what amounts to a 20 percent decrease in program funds over the previous fiscal year. We don't want to make any precipitous decisions; still clearinghouse operations are going to be affected. You will need to curtail spending immediately so that carryover funds can be built to sustain operations beyond the termination date of your present contract. Carryover funds of each clearinghouse will remain with that clearinghouse. Because of considerable variations among clearinghouses, I'm reluctant to have the reductions absorbed on the basis of directed across-the-board cuts or eliminations of specific clearinghouse functions. Each director knows where savings can be made and should therefore analytically examine every clearinghouse activity to select activities to be eliminated or cut. Some activities can be deferred until the next fiscal year without too great a loss in effectiveness."*

Burchinal pointed out that the most obvious clearinghouse activities which lent themselves to savings were:

- travel,
- advisory board meetings,
- abstracting and indexing costs,
- local files, and
- preparation of bibliographies.

He asked the directors to " *...please give careful consideration to ways of accomplishing maximum savings in your programs without serious sacrifice in absolutely needed information analysis products. You know we want to maintain a vigorous information analysis program in spite of any temporary setback such as the one which we are now facing."* [12]

Meanwhile, the crisis was deepening; the budget cycle was already slipping into FY 1971. At one point there was further discussion about whether ERIC could retain the clearinghouses on Adult Education, Junior Colleges, and Rural Education. Smardak and Trester co-authored a memo to Marron which argued for their retention. They suggested that "...*every possible means be explored to salvage these clearinghouses during the current fiscal year.*" They argued:

"a. *Clearinghouse eliminations are irreversible, thus elimination of two of our better CH's, RC and JC, would produce gaps in our information analysis coverage of education areas currently popular in the present administration.*

b. *Elimination of these clearinghouses would leave us vulnerable to the criticism of 'management by crisis.' We should be in a position to prove that we have explored every possible means of continuation.*

c. *Closures will undoubtedly affect morale of management personnel in other clearinghouses. Possibly directors themselves will not be overly concerned but their principal assistants who are 100% ERIC supported will begin to feel insecure about ERIC's permanency and will seek other positions. This can result in lower quality of managers being available.*

d. *With the gain of some lead time, economies can be planned for judicious pruning of various clearinghouse functions, publications, or activities. This can be done clearinghouse by clearinghouse through detailed and deliberate screening.*"

Smardak and Trester argued for six-month funding of these clearinghouses as a viable alternative.[13]

By October the budget jigsaw puzzle began to fit together. The clearinghouses had responded to Burchinal's August letter with pledges of economies and reduced expenditures. ERIC managers saw some possibilities of juggling the clearinghouse continuation contracts start-up dates. Burchinal's course of action became more solidified. On October 9 he discussed all budget ramifications with the OE Policy Advisory Group; on the 13th he further discussed possible avenues of action at a special meeting of bureau representatives. On the 15th he wrote a memo for the approval of Michael Marge, the Acting Deputy Assistant Secretary for Planning, Research, and Evaluation. In this memo Burchinal succinctly listed all of the argumentation that had gone on among ERIC staff and clearinghouse directors. He stated: *"The ERIC budget was reduced from $5.0 million to $4.0 million in FY 1971. Three cost reduction alternatives were explored:*

(1) reduce all 20 clearinghouses by approximately $50,000;
(2) merge or close up to five clearinghouses; or
(3) close or merge several and reduce some others."

His memo went on to state that "*...the first option is not desirable because it would result in 20 weak operations and be counterproductive. Option two would remove too many needed services in high priority areas. Thus, the third option is selected.*"

The agreed upon action was to combine the clearinghouses on Modern Languages and Linguistics; the clearinghouse on Adult and Continuing Education would be closed, and the existing clearinghouse on Vocational and Technical Education would be expanded to cover adult and continuing education; the Clearinghouse on Educational Media and Technology would be continued, but with reduced funding, along with all other clearinghouses; and ERIC would create a "document processing facility" to plug subject coverage gaps in the resulting clearinghouse structure." [14]

One week later, October 20, in another memo to Marge, Burchinal discussed closing the Clearinghouse on English. But that was the last of the frenzied list of possibilities. In actuality, during the time alloted for usage of FY 1971 money, only one of the above actions was actually consummated: the combination of the language clearinghouses. These two merged into one---the Clearinghouse on Linguistics---effective June 1, 1971.

Evaluation of ERIC

Establishment of NCEC in May 1970 gave Burchinal a license to sail an unchartered course on the sea of educational information systems and communications. In general terms, this meant that ERIC, which had once been the center of his universe of thought and emphasis, was going to be deemphasized to the status of a data base. In the future ERIC would become a satellite---a very important body---but largely subsidiary to the world of dissemination.

This concept was very clear. Less than a month after the formation of NCEC, Burchinal assembled a "Dissemination Advisory Committee" which held three meetings (in June, July, and September). The goals of this group were to:

> *"...review the current and planned NCEC dissemination and application programs and to identify alternative new dissemination and application initiatives for the guidance of NCEC."* 15

In its report, which appeared in the Fall of 1970, the committee clearly agreed with Burchinal's new concept. The report stated:

> *"The shift in emphasis at NCEC from the dissemination of information to the spread of improved practice means to the Committee that ERIC can no longer be the center of the system. While the spread of improved practice can unquestionably be enhanced by distributing information about practice, the modification of practice of course requires more than the transmission of information. Research results are transmitted by documents; practice is not, although document production, storage, and retrieval are necessary."*16

In addition, the committee was strongly supportive of recent NCEC organizational and budgetary actions:

> *"The Committee wishes to record its endorsement of the way in which NCEC is attempting to face its new responsibilities. The administrative reorganization of the office to create a new 'Division of Practice Improvement' which is separate from the 'Division of Information Resources' is clear acknowledgement that information transmission alone is not powerful enough to improve practice. The shrinking of funds for the ERIC system in favor of expanding other functions of NCEC is a practical and realistic step taken to achieve NCEC's broader objectives. We endorse these specific moves and, beyond that, we congratulate Lee Burchinal and NCEC for the serious and open-minded way in which they are undertaking this new work."*17*

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*From this point forward, this historical account of ERIC will not follow the details of the development of dissemination activities nor the Practice Improvement Division and its successor organizations in NIE. That story rightfully belongs to the larger concept of dissemination, particularly those developments carried out in the State educational agencies.

At the same time the Dissemination Advisory Committee was meeting (throughout the summer of 1970) another Burchinal-appointed group conducted an assessment of ERIC. With severe budgetary problems on his mind, with his launching of emphatic moves toward dissemination, and with an earnest desire to evaluate the management and direction of ERIC, Burchinal appointed a strong committee with education and information backgrounds to give him advice about ERIC. Membership was as follows:

NAME	ORGANIZATION
Launor Carter, Chairman	System Development Corporation
William Costs	Western Michigan State University
W. E. Ellis	South Carolina State Department of Education
Sidney Forman	Columbia University
Paul Hood	Far West Laboratory for Educational Research and Development
Frank Mattas	San Mateo County Board of Education
Samuel Rosenfeld	National Aeronautics and Space Administration
Sherman Ross	National Research Council
Alvin Skelly	Great Cities Research Council
Lorne Woollatt	New York State Education Department
Philip Wright	New England Research Application Center

The avowed mission of this "ERIC Management Review Group" was to examine the practices and procedures which Central ERIC used to manage and guide the ERIC clearinghouses. For the record, this did not include the ERIC Facility or EDRS. This was a unique look at ERIC an incisive, introspective examination. Through the eyes of the committee one could not only discover interesting attitudes about an information system in education, but also an appreciation of how effectively the ERIC managers were doing their job. Therefore, the group's report merited close and detailed inspection. Each of their recommendations is covered in the following numbered items:

1. *"Central ERIC management should clarify the relative emphasis to be placed on serving users with widely differing needs"*.

Basically, the pertinent question was: Should the clearinghouses orient their services toward researchers or practitioners? Central ERIC had not really addressed this question. Yes, the "R" in ERIC's name was changed to "Resources," but not much thought had been given to how the clearinghouses should slant their acquisitions, files, materials, news releases, address lists, and contacts with educators, to mention but a few of the categories which required special approaches to special audiences. Researchers, in general, could be satisfied if they had bibliographic references, a data base, and easy access to those documentary tools. Generally, the information posture of a practitioner is different. He usually has neither the time nor inclination to plough through the literature himself; he is more inclined to choose from among the harvested crop of summaries and interpretation of the literature.

So, the obvious dichotomy. Although it was not difficult to recognize or understand, a management decision was required. The group's report recommended that ERIC select one, select the other, or select both and then provide the appropriate guidance and funding apportionment to carry the decision through to fruition. Even though Central ERIC leaned toward the practitioner, a clear, unequivocal decision was not immediately forthcoming. Ultimately, for example, the "R" in RIE was changed to "Resources" (but not until 1975) and the policy manual, once issued, began to make references to favoring the practitioner; never, however, to the complete exclusion of the researcher.

2. *"Central ERIC should issue guidelines to clearinghouse directors regarding the content, intended audience, format, and level of analysis and writing of interpretive reports".*

Although the committee felt it was laudable that the directors received almost unlimited freedom in the conduct of their information analysis program, it also felt that some guidance from ERIC management would be helpful. Again, what was the primary audience? Researchers or practitioners? What they had concluded in their perusal of the system was that most of the publications were, and should be, pointed toward practitioners. Again, however, specific policy was lacking.

What about format and level of content? *"Some reports we examined had no abstracts or summaries. Some were carefully edited, printed on quality paper, and represented very high quality products. On the other hand, others seemed to be rather hastily formed, were mimeographed, and may not represent the kind of product desired..."*. The report went on to suggest that Central ERIC *"...consider the question of format, depth of analysis, quality of the report material, and expense judged appropriate in producing the reports"*.

The committee had a good point, and Central ERIC managers agreed that such guidelines should be written. Basically, the committee was right about the freedom angle. Central ERIC believed that the conditions of publication (economical publication) varied widely. Directors could make arrangements with professional associations, with college or university presses, commercial publishers, the Government Printing Office Field Offices, commercial printers, or even the local Xerox or Multilith machine. Central ERIC's mood was one of complete license. Not that no one cared.

Rather, no one wanted to interfere; everyone wanted the clearinghouses to maintain their autonomy so as to better serve their clearinghouse constituencies. One clearinghouse, that on Reading, produced a style manual which it sent to its authors for guidance and compliance. There was some discussion in Central ERIC as to whether to use this as a model, but there was no followup.

Perhaps the most reasonable solution to the problem would have been to appoint someone or some group of system personnel to draft a least some guidelines that all clearinghouses could live with---guidelines that would be strong enough to improve the overall quality of the information analysis products. But that was never done.

3. *"Central ERIC should examine the relative value of the report literature, curriculum and teaching materials for inclusion in ERIC. The present inclusion of primarily the report literature no longer seems justified in view of the apparent emphasis on ERIC's service to practitioners".*

This was another plea for some kind of emphasis on practitioner-oriented materials, specifically in terms of the types of reports entered into the data base. Although not so obvious in 1970, there was a continuous trend toward acquiring more documents with a school practice background. Thus, this situation gradually improved through the years, and the policy guidelines picked up this message. In fact, during the late seventies Hoover began to think seriously about a "practice file" and tried several times to secure funds to finance such a venture. By 1979, however, his efforts were beginning to bear fruit.

4. *"It is our understanding that the Central ERIC management does not place a high priority on the rendering of direct services by clearinghouses. In view of the large number of requests for such services, it is suggested that this position be reevaluated, particularly by a careful analysis of the linkage between the ERIC system and the ultimate users".*

Burchinal, Clemens, and Marrón were primarily worried about the high cost of question-answering activities. This worry became all too much of a reality exactly at the time the advisory group made its report (during the budget crunch of FY 1971). It was during that precise time when Marron, both at directors' meetings and annual review sessions, pleaded with the directors not to advertise their services. This was the period when the directors were asked to prepare form letters and canned packages of materials with which to respond to questions. ERIC management was acutely aware of that huge number of educators throughout the country who could theoretically swamp the clearinghouses with requests for information. Burchinal talked about ERIC being a wholesaler, not a retailer of educational information. In other words, ERIC would create a data base and issue RIE, CIJE, and computer tapes on a wholesale basis for utilization by such retailers as university libraries, State departments of education, and special independent educational resource centers. Also, it must be borne in mind that at this point in time the clearinghouses were not permitted to charge, in any way, for anything (later this stance became modified). This was a situation in which ERIC policy was fairly clear: deemphasize question answering! Once the budget crunch years were out of the way, however, Central ERIC began to loosen the reins on question-answering.

5. *"While recognizing the quality of the ERIC production system, there does not seem to be sufficient emphasis on the 'marketing' of ERIC services; that is to say, the resources available through ERIC need to be actively and vigorously brought to the attention of potential user groups".*

Probably the best explanation for this lack of marketing was one which did not, on the surface, sound credible. The environment of a Federal bureaucracy was simply not one which lent itself to marketing. The picture of a bureaucrat reviewing and approving a budget line item which called for a large sum to be spent for "advertising" or anything which smacked of it was not one which occurred with frequency. The closest most Federal agencies of this period came to advertising or marketing was to spend money for exhibits, for brochures, or for travel money to allow personnel to make a speech or give a presentation. No commercial advertising, no purchase of address lists, no radio spots, no TV commercials, no hard-sell tactics. Or, at least very few. In recent years many Federal agencies changed their stance on advertising or publicity gambits. So has Central ERIC. But throughout most of ERIC's history the clearinghouses carried most of the burden of exposing the system to the public. They did it largely through newsletters, journal columns, exhibits, workshops, programs at professional meetings, slide and filmstrip presentations, and the like.

6. *"It is suggested that guidance to clearinghouse directors should be made explicit, in writing, perhaps through a series of policy guidance documents".*

It was obvious that committee members, in their discussions with clearinghouse directors, had been importuned for the creation of a policy manual. Indeed, the clearinghouse directors became a bit hurried, uncertain, and confused with policies that came to them via a site visit, an annual review session, a directors' meeting, a technical meeting, "ERIC Management Notes", or even during a telephone conversation. Central ERIC heard this recommendation loudly and clearly. Almost immediately Smardak began to draft the policy manual; unfortunately, due to unexpected delays, it was not published until April 1974.

7. *"Central ERIC management should review, clearinghouse by clearinghouse, the wide variation between clearinghouse functions as revealed in FY 69 expenditures (and presumably in similar FY 70 figures) to determine if they are consistent with the policies and guidance that may result from the previous recommendations".*

The variations in expenditure of money in categories of effort consitituted an extremely complicated subject. More so than the committee realized. There were indeed wide differences. As the committee pointed out:

> *"For example, in the area of document acquisition and processing, one clearinghouse spent as little as 20% of its resources on these activities, while another spent just over 55% on them. In the area of analysis, interpretation, and linkage work, one clearinghouse spent about 20% of its resources in this area, and another spent almost 65% of its resources on these activities. Similarly, one clearinghouse seemed to have used as little as 10% of its resources on administration, advisory boards, and publications, whereas another spent as high as 40%".*

Some of these gross diversities were obviously vital concerns to Burchinal, Marron, and the clearinghouse monitors. Although the precise degree of impact from the committee was difficult to judge, nevertheless soon thereafter Smardak volunteered to prepare a budgetary reporting system, along with guidelines, which Central ERIC sent to the clearinghouses in June 1971. This "Performance Category Budget" was a management instrument designed to determine the numerical and dollar emphasis, as well as unit costs for all clearinghouse functions.

Some major variations continued to be evident. However, as the Performance Category Budgets and annual review discussions revealed, these variations resulted largely from the following factors:

- Rather large variations in overhead rates.
- Some of the clearinghouses' institutions made significant "local contributions" through absorption of a percentage of overhead, contributions of salaries, printing costs, computer time, and so on.
- Salary costs varied throughout the country.
- Some clearinghouses could juggle their staffs with half-time employees, graduate assistants, and other low-cost personnel; other clearinghouses could not.
- Some clearinghouse subject area populations were large, some small; some concentrated, some scattered. Contract costs for acquisitions and other activities varied widely.

But the committee's recommendation on this point was valid, and ERIC reacted.

8. *"Central ERIC management has a well formulated management plan as it relates to clearinghouses. It is recommended that a detailed examination be made, clearinghouse by clearinghouse, of the extent to which the administration of the plan has been followed year by year."*

The "management plan" referred to consisted of site visits, annual review sessions, formal letters giving Central ERIC management impressions of the review sessions, formal receipt of proposals, and negotiation of the contracts. Generally the committee members felt that this chain of events was acceptable. However, they had gained some evidence from directors that this schedule was not always maintained. That was true, though it was seldom intentional. Occasionally site visit plans were cancelled because travel funds were depleted or other unexpected crises interferred, or a monitor failed to write an annual review summary. But Central ERIC management of these activities, through the years, was relatively good.

9. *"Preliminary information suggests that a considerable savings might be made through centralization of the more routine aspects of document processing."*

This suggestion referred to committee discussions resulting from a quick study which Trester prepared, showing that the cost of indexing and abstracting per document could be reduced from the existing ERIC system rate of about $45 to $50 down to $20 or $25, if all the documents were processed in a centralized location. This concept never reached reality for two reasons: Marron disagreed with the study's conclusions and the budget crunch never became such a total emergency that it was necessary to experiment with this concept, which would considerably disrupt the system.

10. *"Central ERIC should study present practices regarding the criteria for selecting material, bibliographic format, characteristics of abstracts, etc. to assure that ERIC practices are maximally compatible with other information resources frequently used by libraries and information centers".*

This recommendation was never implemented in the all-inclusive manner the committee intended. To some extent the point was unjustified because all of the procedures for selection, bibliographic format, and abstract preparation were taken from relatively standard library and information science procedures. Perhaps the emphasis of the complaint was the fact that although written guidelines existed, they were not detailed enough, and those that existed were being continuously revised. No doubt a thorough study of such procedures would have effected quicker improvement and allowed a more firm foundation. For example, in view of ERIC's interest in making available computer searching technology, it might have been appropriate to conduct a study to determine the impact of computer searching on cataloging, indexing, and abstracting techniques. But this was still in the future, and there were so many other, more pressing concerns.

11. *"Central ERIC should sponsor studies of the criteria to maximize the utility of various report areas as a means of obtaining guidance regarding the extent that ERIC should sponsor information activities in the several areas".*

This recommendation, somewhat vaguely stated, intended to question the validity of more or less equal input to the ERIC file on the part of all clearinghouses. In terms of quality of document input, was one document in the field of tests and measurement of equal value to one document in a field not at all yet well documented? Therefore, a study of the material already in ERIC, an examination of the state-of-the-art of all the fields of education, *plus* the comparative value of documents to practitioners, student-scholars, and researchers, would give ERIC clues to the comparative value of all collected documents so as to determine whether or not any single document should be selected for input. A complicated and far-ranging proposal! In fact, it was so complicated, so difficult to pull off, that the value of study (if anyone would have the temerity to undertake it) would be questionable. Too subjective, too open to individual bias, too demanding a task, because it would require the judgment of people who were not only experts in one or two educational fields, but all of them. In theory such a project might be worthwhile; in practice it sounded very questionable.

12. *"The National Center for Educational Communication should have a plan and analysis capability and associated resources which allow for prompt response to rapidly developing areas of interest".*

The committee went on to propose that ERIC establish a "current subjects" clearinghouse within Central ERIC.

> *"Such a clearinghouse could collect information in special or new areas, analyze it, issue bibliographies, and generally act as a resource for those concerned with new trends in education. The material collected and processed by such a clearinghouse would be of a different character than that usually handled. Probably it would include newspaper clippings, material from popular magazines, speeches by administrators and politicians, as well as items from more traditional sources."*

To propose such a "clearinghouse" within Central ERIC was a somewhat naive suggestion. Central ERIC was primarily a management group, primarily composed of people with information system backgrounds or at least information system orientations. None of the Central ERIC staff considered himself or herself a subject expert in the field of education, even those who, at one time or another were involved in question-answering activities. ERIC was a decentralized system which sought education experts in educational institutions or organizations. Therefore, one facet of this suggestion was out of the question from a practical viewpoint. The only sensible method of implementing such an idea would be to arrange a contract to carry it out.

Although the committee's suggestion on this point was never adopted, there was a natural inclination among the clearinghouses to cover all (or nearly all) of the new developments or "hot topics" in education. Through the years, the clearinghouses handled this situation very well. They have collected information from all sources, have prepared bibliographies, have published special information analysis products (some better than others), and have met the challenge of the educational information seekers who required all kinds of information on contemporary developments.

13. *"It is recommended that the expressed intent of Central ERIC should be to continue individual clearinghouses on at least a three-year basis, provided there is satisfactory performance and funding and priorities permit".*

Further explication of this point indicated that the committee also felt that:

> *"In certain stable or basic areas one might except that the clearinghouse would continue operation at a given institution for a longer period---perhaps a five-year cycle. No matter what the length of understanding, the sponsoring institution should be given at least a year's notice if there is an intention to discontinue a clearinghouse. this length of time seems only reasonable in view of the fact that most of the clearinghouses are at academic institutions where yearly appointments tend to be made for employment contracts".*

These were somewhat idealistic attitudes, but they were particularly pertinent during the period when the entire system was alive with rumors about what clearinghouse would be combined or discontinued. ERIC's quick, off-the-top-of-the-head reply was that such contractual arrangements were not possible. Probably equally true was the attitude that at that particular time ERIC did not want such arrangements. The system was too fluid, the budget picture too cloudy; they wanted and needed all the contractual maneuvering room they could get. Later on, when ERIC became a part of NIE and the management conditions changed, a three-year clause became a part of the clearinghouse contracts, but for a different reason than the management review committee recommended. Still later, a five-year clause was introduced, but again for different reasons.

14. *"It is recommended that USOE establish an advisory group for the National Center for Educational Communication."*

Each clearinghouse had an advisory board and every one of the directors thought such advice served a very important and beneficial function. The management group's suggestion was logical: *"It is our feeling that a policy and advisory group might serve as an important link to other information systems, to ERIC users, to the educational community, to the agencies supporting the educational communications effort."* Central ERIC managers agreed with the committee's recommendation, but did not implement it because: *"...HEW and OE policy is very explicit in advocating a reduction in the number of advisory groups. This precludes any possibility of carrying out this recommendation."* In all probability, the ERIC willingness to agree was only lukewarm; if indeed the advisory board would have been an issue worth fighting for, it would have been requested through channels or established as a body with some other title or purpose.

Overall, the ERIC Management Review Group did an excellent job. Practically all of the comments and recommendations fitted into three general categories:

- policy matters relating to clearinghouses;
- managerial or systemwide changes; and
- studies.

Those relating to policy were largely (though never completely) settled through subsequent issuance of the policy manual. Many of the recommendations were subsequently acted upon as time, money, and attention all came together at some propitious moment. How well did ERIC management stand up to this scrutiny? Probably a little better than average. The committee's remarks were not caustically critical; were not punctuated with animus. The best description of the committee's attitude is that contained in their own words:

> *"Almost inevitably the report of a review group highlights possible shortcomings or areas needing attention. This report is no exception. But we would be remiss if we did not express our appreciation of the very real achievements of the ERIC system and those responsible for developing it. A system has been developed which contributes greatly to the needs for educational communication."* [18]

The RAND Report, December 1971

The severe budget problems during FY 1971 had resulted in confusion, much discussion, and a flurry of budgetary planning documents; however, the total impact on ERIC as a system was largely confined to reduced funding levels for all clearinghouses and the actual combination of the two language clearinghouses into one. The clearinghouse directors, through pledges of economies and creation of carryover sums to ease the budget crunch at contract renewal times, were attempting to create a climate of system survival and self-survival.

Throughout 1971, however, there was that constant flurry of plans for clearinghouse revisions or consolidations. As rumors of these spread throughout the country, Central ERIC was bombarded with letters from pressure groups which appealed for the maintenance of this or that clearinghouse. This correspondence traffic became so burdensome that Marron and Burchinal created form letters which contained canned information about the current status of this or that clearinghouse.

Then the time scale slipped into FY 1972 and the ERIC budget for this year was no larger than the last. Again, it was a confusing period. One of the aces up Burchinal's sleeve, one hope he had for gaining some guidance on system revision, was a study contract which had been awarded in July 1971. The RAND Corporation, of Santa Monica, California, was hired to review the current ERIC clearinghouse structure and *"...to provide NCEC with exemplary alternative models for the ERIC Clearinghouse network that could render ERIC more responsive to the needs of the education community."*

No other study, no other event, no other crisis had such an impact on the ERIC system as the RAND report. It caused more controversy among all ERIC system members and consternation in the ranks of clearinghouse directors. Even the report's title" "Alternative Models for the ERIC Clearinghouse Network" gave a clue to the reasons for its repercussions.

The report's authors, P. W. Greenwood and D. M. Weiler, gave a brief statement of the backdrop for their study:

> *"In recent years, as the ERIC system has continued to grow and national education interests have shifted, USOE staff in the National Center for Education Communication (NCEC), which manages ERIC, have become concerned about the system's ability to respond effectively to new issues that cut across or fall outside of the domains of the existing CHs. At the same time, new Federal initiatives on the immediate horizon---in particular, the proposed National Institute for Education (NIE) and USOE's Teacher renewal strategy---make it desirable to reevaluate ERIC's role."*

In the brief span of five months during which they accomplished their research and reported their findings,

> *"The RAND study team surveyed the scope and sources of education literature, analyzed the utility to the user of existing and planned non-ERIC information resources, and studied the operations of the current ERIC system. Team members conducted numerous interviews with researchers, educators, officials at USOE and HEW, managers of Information Resource Centers and similar agencies, CH directors and staffs, and people in relevant professional associations."*

It is not unfair to state that the RAND study was not an enlightened, in-depth critique of the ERIC system, its operations, and its activities. Yet the authors did acquire some background information, some basic understanding of the system which was sufficient to their main purpose of examining "alternative models." For example, they listed all possible user groups, with their needs and interest levels:

> "*Basic researchers*
>
> *Mostly at universities, some in profit and nonprofit research organizations. Theoretical orientation; objective is to increase basic knowledge about human behavior.*
>
> *Applied researchers*
>
> *In universities, research organizations, industry, government-sponsored labs and centers. Practical orientation; objective is solution of important immediate problems.*
>
> *Practitioner specialists*
>
> *At the school district or school building level; administrators, testing and guidance specialists, curriculum and subject matter (mathematics, reading) specialists, trainers of personnel, etc.*
>
> *Practitioner generalists*
>
> *Teachers.*
>
> *Decisionmakers*
>
> *Legislators, government executives, school board members, government commissions, etc.*
>
> *Other disseminators*
>
> *Communications media, noneducation agencies of government, citizens' groups, unions, etc."*

Considering these kinds of people as users and potential users of ERIC, Greenwood and Weiler placed them into two general categories: researchers and practitioners. With these two groups in mind, the authors identified an array of 10 possible ERIC system objectives:

"1. *Provide access to fugitive research and occasional literature.*

2. *Provide access to fugitive research and occasional literature, practice and commercial literature, and curriculum materials.*

3. *Review and evaluate research and practice literature.*

4. *Review and evaluate research and practice literature, commercial literature, and curriculum materials.*

5. *Synthesize and summarize research and practice literature.*

6. *Provide query response for researchers and practitioners.*

7. *Provide personalized services for the research community.*

8. *Provide personalized services for practitioners.*

9. *Translate research and practice results into practical guides for practitioners.*

10. *Act as educational change agents."*

Next, they examined the world of education in relation to information and came up with six alternative ERIC models:

O Procedural Change Model

This model would retain the existing clearinghouses; however, the authors felt that several changes in the current mode of operations would improve responsiveness:

"1. *More aggressive pursuit of practice literature"*

The authors stated that "*...all of the practitioner resource centers that we visited cited a shortage of documents describing programs in current practice. Many of them felt the need to supplement the ERIC data base with their own locally generated literature."*

"2. *Greater differentiation of data base"*

An alleged complaint about ERIC was that it was "*...difficult for users to identify documents they will find useful without laboriously reading through stacks of abstracts and even the documents themselves."* Greenwood and Weiler felt that the establishment of categories of documents---some sort of file partitioning---would relieve this existing difficulty. Or, perhaps, a simple two-level system of categorizing documents, such as one level of *"completely indexed, and identified as to purpose, audience, etc."* and a second level which would be *"indexed with only one term, and not referenced in any but the most extensive searches or bibliographies."*

"3. *Improved intra-ERIC communications"*

The authors felt existing communications were poor and argued for improved methods, more open lines between and among all systems personnel, and more working sessions and meetings at various levels---both working and policy.

"4. *"Systematization of CH activities"*

Here the authors argued for a greater need for uniformity among clearinghouses. They believed that some directors emphasized user services, others did not; or some products were available at one clearinghouse, but not at another. *"One result is user frustration and dissatisfaction, much of which could be eliminated by establishing more uniform and systematic coordination of the kinds of services and information products offered by each CH."*

0 Divisional Model

Greenwood and Weiler stated that the present network of clearinghouses has several alleged drawbacks. *"Among these, critics cite gaps in its coverage, slowness in responding to new issues in education, and unwieldy management communication, which are a direct result of the overspecialization and proliferation of CH charters."* The simplest and most obvious way of solving these problems, felt the authors, was to create ERIC divisions, each of which would contain several clearinghouses, headed by a divisional staff which reported directly to Central ERIC. Also including all of the current clearinghouses, this model would appear something like the following:*

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*This chart appears on page 33 of the RAND Report.

DIVISIONS	CLEARINGHOUSES	NOTES
Instruction	Reading Social Science English Foreign Language Science Education	
Career Education	Vocational Education Adult and Continuing Counseling and Guidance	
Administration	Higher Education	a
	Junior Colleges Educational Management Teacher Education	
Special Education	Urban Disadvantaged Rural Education Early Childhood	
"Independents"	Library and Information Science	b
	Tests and Evaluation	b
	Media and Technology	
	Exceptional Children	c

a. Alternatively might be considered under Career Education Division.
b. Alternatively might be considered under Administrative Division.
c. Alternatively might be considered under Special Education Division.

The divisional arrangement would improve overall ERIC system management, the authors thought. *"The present network largely precludes this kind of closer management because of the difficulties inherent in attempting to monitor and coordinate directly the activities of 19 different organizations. Closer management would enable each Division staff to submit periodic recommendations, with detailed supporting arguments, concerning such divisional functions as:*

- *The number of CHs in the Division, and the literature domain of each CH;*
- *Allocation of divisonal budgets among CHs in that Division;*

- *Definition of user requirements and 'standards of service' for each CH in the Division;*
- *Planning, coordination, and systematization of all information analysis activities within the Division".*

O Consolidated Model

The third model which Greenwood and Weiler devised was one which provided for all existing subject scopes, but group them (in some cases with procrustean squeezing) into seven or eight clearinghouses. The chart which appears on page 35 of the RAND Report is reproduced below.

CONSOLIDATED CLEARINGHOUSES	PRESENT CLEARINGHOUSES
Communication Skills	English Reading Modern Languages
Arts and Sciences	Science and Mathematics Social Sciences
Career Education	Adult Education Vocational Education
Special Education	Urban Disadvantaged Early Childhood Rural Education Exceptional Children
Education and Information	Library and Information Science Media and Technology
Higher Education	Higher Education Junior Colleges Teacher Education
Management Evaluation and Guidance	Management Tests and Evaluation Counseling and Guidance
New Concepts	---------

The authors recognized that management (divisional or Central ERIC) would encounter difficulty in finding the skills which could be placed in one location. *"However"*, the authors pointed out, *"it may not be necessary for all the employees of a CH to work in the same place; it would seem feasible to employ specialists throughout the country to cover topics within a CH domain. Under this arrangement it would also be possible for some of the staff in existing CHs to participate in new CHs created through consolidation"*. The "new Concepts" clearinghouse would *"deal with emerging topics that overlap the domains of several CHs and show no clear indication that they will remain of long-term interest to educators. Environmental education, vouchers, and performance contracting might be candidates for this type of coverage. When a topic becomes clearly defined and a continuing interest established, coverage could then be transferred to one of the other CHs."*

Functional Model

For this model the authors threw out the entire existing clearinghouse network and replaced it with a different taxonomy of clearinghouse concepts. They came up with the following areas of interest*:

INSTRUCTION	INSTRUCTIONAL SUPPORT
General Education Special Education Exceptional Children Career Education	Management and Administration Technology Evaluation

The reasoning behind this categorization was that many educational problem areas cut across the scope of several of the existing nineteen clearinghouses. The problem of disadvantagement, for example, encompassed the areas of reading, testing, and counseling. Also, some problems of higher education related to management in combination with media and technology. And so on. *"For this reason,"* the authors stated, *"our approach in reducing the overlap between CHs has been to reduce their total number while making the literature domain partitions between them as clean as possible."* The model could be designed as divisional, as indicated above, or could exist as seven independent clearinghouses.

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*This chart appears on page 38 of the RAND Report.

Centralized Model

As the report explained, *"The motivation behind a Centralized Model is a desire to increase the system's efficiency in covering those domains that are relatively stable and of general interest by utilizing a single Core CH, and establishing small specialized CHs only when there is a large body of coherent research in progress or there is a uniquely defined clientele to be served."* Such a model might appear as follows:*

Urban Disadvantaged CH
Exceptional Children CH
Career Education CH
Higher Education CH
Library and Information Science CH

These clearinghouses were selected because of the individuality of their audiences. From the viewpoint of services, the Library and Information Science clearinghouse would act as a primary agent in supplying information centers or information specialists on whom the practitioners would depend for specific users services.

Regional Model

This was somewhat more structurally complicated than the previous models. It was inspired by the Exceptional Children and Instructional

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* This chart appears on page 38 of the RAND Report.

Materials Center Network which the authors felt *"has been reasonably successful in responding to the practical needs of educators for specific informaton. The model is designed to capitalize on existing and planned Information Resource Centers that are in danger of being underused or misused, and to incorporate planned Teacher Centers as an integral part of the system"*. Schematically it would appear as it is displayed in Figure 8.

The six national clearinghouses, oriented toward specific user groups, would have the same general tasks of clearinghouses in previous models: acquisitions, indexing, abstracting, information analysis, and the like. The regional activities would be in the business of collecting practitioner-generated literature for inclusion in the data base; also, they would provide services to users *"...at a more complex and ambitious level than could easily be provided by national level CHs..."*. Many of the local centers would have one-person staffs, could be locally (or State) funded, and would deal with the majority of day-to-day user questions. Also, the local centers would collect information relating to local practice, which might or might not be transmitted through the pipeline to the national data base.

At this point, Greenwood and Weiler had laid the groundwork for an evaluation of the existing clearinghouse structure as well as the six additional theoretical models. The simplest evaluation was to construct a matrix of the objectives and the models and assign evaluation scores. The RAND matrix, with the study team supplying the scores, appears in Figure 9.

Although not indicated on the chart which appears on the following page, this method of team evaluation resulted in the following scores:

1. ERIC Today	350
2. Procedural Change	430
3. Divisional	600
4. Consolidated	810
5. Functional	840
6. Centralized	730
7. Regional	890

*This chart appears on page 42 of the RAND Report.

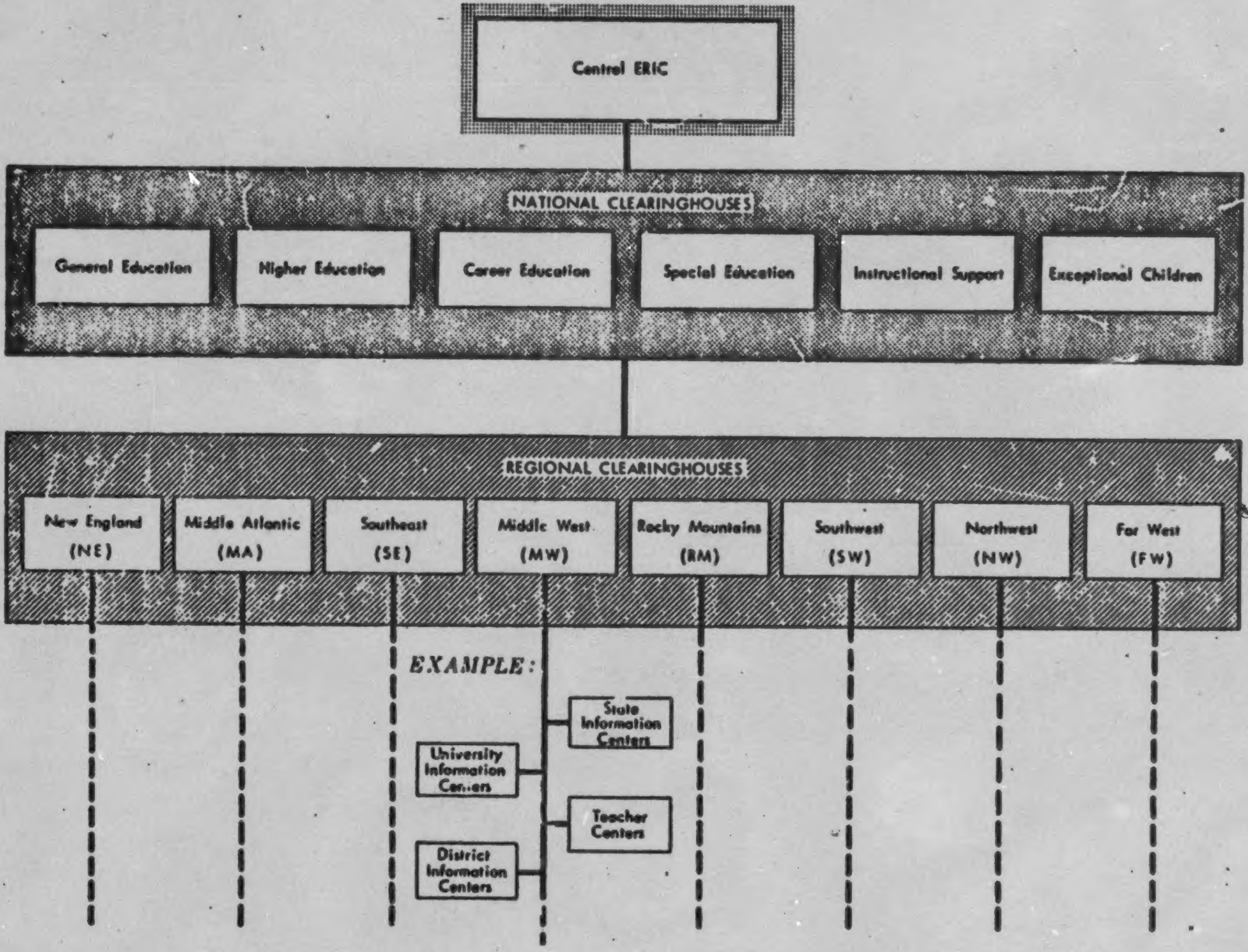
Central ERIC
NATIONAL CLEARINGHOUSES
General Education
Higher Education
Career Education
Special Education
Instructional Support
Exceptional Children
REGIONAL CLEARINGHOUSES
New England (NE)
Middle Atlantic (MA)
Southeast (SE)
Middle West (MW)
Rocky Mountains (RM)
Southwest (SW)
Northwest (NW)
Far West (FW)
EXAMPLE:
State Information Centers
University Information Centers
Teacher Centers
District Information Centers

FIGURE 8: EXAMPLE OF A REGIONAL MODEL

OBJECTIVE	MODEL						
	ERIC TODAY	PROCEDURAL CHANGE	DIVISIONAL	CONSOLI-DATED	FUNCTIONAL	CENTRALIZED	REGIONAL
	A	B	C	D	E	F	G
1. Access to Research	80	90	90	100	100	100	90
2. Access to Practice	30	50	60	70	70	60	100
3. Review and Evaluate for Research	20	40	50	95	100	90	80
4. Review and Evaluate for Practice	10	20	70	80	80	60	100
5. Synthesize and Summarize	50	50	60	45	100	70	70
6. Query Response	30	30	60	70	80	70	100
7. Personalized Services for Researchers	50	50	60	100	90	90	70
8. Personalized Services for Practitioners	20	20	40	60	70	60	100
9. Translate and Research	40	50	80	90	100	80	80
10. Change Agent	20	30	30	50	50	50	100

This chart appears on page 47 of the RAND Report.

FIGURE 9: RAND MATRIX FOR EVALUATING CLEARINGHOUSE MODELS

The authors came up with another methodology for evaluation: they assigned "weighted" numbers to each objective.* Thus:

OBJECTIVES	WEIGHT
1	100
2	100
3	95
4	85
5	75
6	25
7	15
8	10
9	10
10	0

The model weighted scores, again with the research team's evaluation, appeared as follows:

MODEL	WEIGHTED SCORES
ERIC Today	211
Procedural Change	274.5
Divisional	363
Consolidated	472.25
Functional	493.5
Centralized	424
Regional	507

Although they are somewhat lengthy for this narrative, it is proper to list all five of the conclusions which Greenwood and Weiler reached in their report:

"1. *Simply increasing the supply of primary literature will have little benefit unless more careful attention is paid to its evaluation and synthesis; therefore, evaluating and synthesizing the data base should be a minimum system objective.*

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*These tables appear on page 51 of the RAND Report.

2. *The most glaring deficiency in current education literature is the lack of documents translating preferred programs and research findings into operational advice to practitioners.*

3. *Either the Consolidated or the Functional Model appears to offer immediate improvements in responsiveness without requiring undue transition costs. The Procedural Change, Divisional, and Centralized Models would each be deficient in important respects; the Regional Model is downgraded primarily because of probable transition and resource problems that need not be faced in order to meet these objectives.*

4. *Moving into the query response or service roles entails a considerable expansion of the management responsibilities and skills required in the network, and considerable more funds; yet we believe that someone will have to fulfill these objectives if USOE's teacher renewal strategy is to be supported by effective information dissemination activities.*

5. *If query response and personal service objectives are given higher priority at some later date, some form of the Regional Model should prove most effective; this Model could be implemented over the long term, using the Functional Model as the structural groundwork.*

6. *Whatever model and objectives are chosen, the findings indicate that some effort should be made to improve the interfaces between ERIC and other information resources, and that greater attention should be devoted to tailoring ERIC's products to its intended audience and evaluating the system's overall effectiveness."* 19

Whether any reader agreed with its factual background, its research methodology, its validity of model construction, or its conclusions, the RAND Report provided an array of concepts which challenged the existing structure and status of the ERIC system. However, taken in the context of the existing budget crisis, it appeared even more of a threat. Some readers of the RAND document were fearful that Burchinal might arbitrarily select one of the more revolutionary approaches and completely overhaul the system, using the crisis atmosphere to forestall any additional research and cut off any further influence from any source. Others were extremely critical of the report and felt that acceptance of any of its approaches would be foolhardy. Some readers, of course, were primarily concerned as to how it might affect their own specific domain.

RAND Report Repercussions

The ERIC directors received copies of the RAND report from Central ERIC soon after its publication.* They were all deeply concerned. At the beginning of 1972 the time was quickly approaching for renewal of a large segment of clearinghouse contracts or the issuance of RFP's for possible merging actions. In view of these circumstances, Burchinal arranged for a directors' meeting on January 4. Most of this meeting, of course, was consumed with discussions about the RAND report and a possible restructuring of the system.

After a full day's discussion, the directors felt they needed more time to react or make substantive comments on the RAND study. They stated to Burchinal in a memo dated January 5:

> *"Its implementation would have profound effects upon the ERIC system, and therefore on the flow of information within the educational community of the United States. Because of this significance, we earnestly recommend that the report be critically reviewed by a completely independent panel composed of people familiar with educational research and information systems. Such a panel would best be appointed by the Executive Committee of the Board of Directors of the American Edutational Research Association. We urge that this review be carried out before any recommendations of the report be implemented."* [20]

As one part of its reply to the above memo, Central ERIC asked for and received several weeks' delay from the Contracts Office before initiating any contractual actions. [21] For the other part of the reply, Marron, writing for Burchinal, stated that any non-ERIC group would consume far too much time to gain background information about ERIC before it could even begin to make evaluative judgments. Therefore, he urged that the directors themselves recommend future courses of action relating to the RAND study. [22]

The directors decided to hold an emergency meeting prior to still another directors' meeting scheduled for February. They convened at the

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*An informal copy of the report was dated December 15, 1971. All information in the preceding section is taken from the "official" version, which bears the date January 1972. It appears in the ERIC data base as ED 058 508.

Pick Congress Hotel, in Chicago, on February 11, for a two-day session. The atmosphere of the Chicago meeting was one of anxiety: everyone wanted to express his opinion, propose recommendations, or suggest whom they should contact for additional information. One director, Gordon, from the Urban Disadvantaged clearinghouse, had prepared a reconceptualization of the ERIC system which stressed the role of advocacy. This too was discussed.

The directors felt the need for some organization among themselves and accordingly selected a Council of ERIC Directors, with Erickson, of the Exceptional Children clearinghouse, as chairman, along with Gordon, Taylor (clearinghouse on Vocational and Technical Education), and Walz (clearinghouse on Counseling and Guidance). In addition, several committees were formed, the most significant being that which Howe chaired, the Committee on Organization, Administration and Scope of Clearinghouses. All of the information derived from the Chicago meeting, plus some he received during subsequent phone calls, served as input for the package of materials which Erickson and others put together for the directors' meeting to be held on February 18. [23]

On the 18th all directors met with Burchinal and the ERIC staff at the Brookings Institution in Washington to discuss many parameters of ERIC's organization, the RAND report, and the current budget situation. The meeting was intense, for the directors had brought with them a document: "The ERIC Network," dated February 18, 1972, which was a position paper drawn up following the Chicago meeting. The document displayed the directors' troubled temperament, their unwavering support of ERIC, and their willingness to devote all their collective energy toward contributing to the strengthening of the ERIC system in its relationship to NCEC.*

The directors stated:

> *"By taking an aggressive and definite stand in the process of system-wide planning and decision-making, we reaffirm our*

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* The ERIC Network" was a position statement to which directors and other attendees contributed at the Chicago meeting. It had no specific, single author, except that it was the position of the "Council of ERIC Clearinghouse Directors."

> *strong belief in the viability and flexibility of the ERIC program, as well as our concern for its future development. In so doing, we emphasize that we are advocates of NCEC in cooperatively planning to preserve the strengths, eliminate the weaknesses, and modify the function and organization of the ERIC network, not only to improve the system itself, but to effectively integrate its contribution with new developments designed to improve educational practice in the United States".*

Unquestionably, the directors were fully aware of the difficulties of the ERIC system by virtue of its being an on-going functional system, a decentralized activity, and an operational entity whose functions depended upon its funding from a Federal agency.

> *"From its inception almost six years ago, the ERIC program has been subject to the winds of political change. We have been expected to make an significant impact on the entire field of education while also copying with fickle priorities, unexpected redirection, shifting of role definition, and minimum and shrinking funding patterns. In spite of these conditions, the ERIC program has become an integral and respected part of the educational community, has developed effective services and products, and has taken* *initiative* *in:*
>
> *a. Advocating and promoting ERIC to professional clientele.*
>
> *b. Linking ERIC with important educational organizations, agencies, and interest groups.*
>
> *c. Developing and servicing information dissemination and service delivery subsystem.*
>
> *d. Developing new information products which are responsive to OE priorities and needs in the field.*
>
> *e. Conceptualizing innovative procedures for the entire system.*
>
> *f. Developing alternative funding and support services".*

The directors clearly had a severely critical attitude toward the RAND study. They said:

> *"The Clearinghouse Directors acknowledge that several 'outside' studies and sets of recommendations have been made regarding the ERIC system---the Rand report being the most recent. We also recognize that these studies have not brought about significant alterations in the system because they were either ill-timed, lacked broad enough perspective or had not developed support from significant and representative power bases. We contend that more appropriate and acceptable system modifications can and should be made by cooperative efforts between the ERIC Directors and the*

NCEC/CERIC staff, and therefore propose to NCEC and CERIC that a significant amount of our time will be spent in this endeavor during the next year."

The Brookings meeting was a lively exchange between Burchinal and the collective directors, with Marron and Hoover participating in the details relating to the ERIC budget. The discussion points were sometimes frank, sometimes incisive, sometimes scholarly, and sometimes confusing. However, they did result in closure: substantial agreement was reached as to the immediate future course of events. These agreements were the subject of a February 29 letter which Hoover sent to all directors. The significant points were:

1. The clearinghouses on Reading and the Teaching of English would be combined, during FY 1972, into one clearinghouse which would be called the Clearinghouse on Reading and Communication Skills.
2. No other clearinghouse would be combined during FY 1972 (there had been some serious discussion about a combination of Educational Administration and the Clearinghouse for Tests, Measurement, and Evaluation).
3. All other clearinghouses would be funded to continue operations into FY 1973.
4. To alleviate the problem of key personnel loss, Central ERIC would honor all academic year contracts through June 1973, regardless of possible future clearinghouse combinations.
5. The delay in possible clearinghouse system realignments meant that all clearinghouse directors should do their best to effect economies in all their operations so as to minimize funding problems for the remainder of FY 1972 as well as FY 1973.
6. A committee of directors, with Howe as chairman, would prepare recommendations on reorganization of the ERIC system, and have them ready for presentation at a directors' meeting scheduled for June. 24

A few months later, during April, Hoover was obliged to inform the OE Contracts Office about ERIC's current plans *vis-a-vis* contractual negotiations. Hoover stated:

> *"During the present fiscal year, Central ERIC has been evaluating the present clearinghouse structure. A study by the RAND Corp. was a key part of this evaluation. Their report recommended several alternatives, or models, which are presently being reviewed. Some very significant issues regarding consolidations have been raised, and we are taking measures to examine them further. Specifically, the Assistant Commissioner, National Center for Educational Communiation, and his staff, have discussed the issues involved during two meetings with all Clearinghouse directors. A committee of Clearinghouse directors is now examining ways in which the ERIC system can be further strengthened, either through consolidations, as proposed, or through rearrangements of the scopes and functions of various clearinghouses. The report of this committee will be submitted to NCEC in June...A system design will evolve by December 1972."* 25

Throughout the Spring of 1972 the directors' committees were all working on materials, preparing position papers, and coordinating various stances among themselves to prepare for another meeting, another discussion of ERIC's future.

But first, a trial run. Howe had been working feverishly on recommendations for reorganization. After he had accomplished the design of the paper and constructed a preliminary draft, the directors thought it might be a good idea to brief Burchinal and the ERIC staff, hopefully to gain approval for the general scope and directions of the report. So an informal meeting was arranged for June 15. Howe, Magisos, Erickson, and Morrissett (Clearinghouse for Social Science) met with Burchinal, Clemens, Marron, Hoover, Smardak, and Trester for a critique session.

The following day Erickson wrote a memo to all directors advising them of the meeting's outcome:

> *"Prior to the presentation of any detail regarding the recommendation, Lee flat-out rejected the entire report, indicated that it was status-quo in its outlook, that it did not address the central issue (consolidated clearinghouses), that the report was unacceptable and that he was disappointed in the Directors."*

Following some "animated discussion," it had been agreed that Howe and his committee would work all the following week to:

1. Prioritize ERIC clearinghouse functions.
2. Simulate funding of all clearinghouse priority functions.
3. Reanalyze all budgets for the past two years in relation to their priority functions.
4. Make budget adjustments so as to live within the ERIC budget for FY 1973.
5. Call all directors about their possible budget and scope modifications.
6. Meet in Washington on June 26 to analyze all the data, revise the Howe study, and make it available for the directors to discuss it at the June 28-29 meeting. [26]

When the directors assembled at the Washington Statler Hilton Hotel, on June 28, the primary subject for discussion was the paper which Howe and his committee had prepared, "Recommendations on Modification of the ERIC System." The Howe committee model envisioned a system of clearinghouses which had three dimensions:

(1) educational levels;
(2) educational subjects; and
(3) educational processes, clientele, and contexts.

Implementation of the model would require clearinghouse scope modifications, differential funding (different functions would mean different funding levels), and the creation of a new clearinghouse for the Arts, to include music, graphic arts, dance, and crafts. The scope of the Tests, Measurement, and Evaluation clearinghouse (to be eliminated) would be transferred to several other clearinghouses. [27]

In addition, Howe and his committee had prepared a budget outline which was so constructed as to live within the limits of the FY 1973 ERIC allocations, that is, approximately $3 million (an approximate $1 million was anticipated as being required for the "service" contracts). Some separate categories of funds were set aside for regional workshops and liaison with professional groups, the latter allocations reflecting an attempt to fulfill some of the desirable characteristics of the RAND regional model.

Then, on the next day, June 29, Howe and some directors went to NIE for a conference with Burchinal and other members of Central ERIC. Burchinal said he could not accept the directors' plan. The budgets, he thought, were not realistic; also, no money had been allocated to the Tests, Measurement, and Evaluation clearinghouse. He did not think that the clearinghouse should be eliminated or combined; indeed it could be expanded, because some of the current planning for NIE indicated that evaluation would be a principal NIE target. Burchinal stated that he thought the ultimate answer was a system containing only eight or ten clearinghouses. In addition, Burchinal believed that ERIC should encourage State Departments of Education to assist in acquisition efforts, ERIC should provide descriptions of exemplary programs and practices, ERIC should minimize individual services, and ERIC should integrate information analysis efforts in line with Clemens' Practice Improvement Division[27].

On the afternoon of the 29th, Erickson, Gordon, Howe, and Magisos met with Harry Silberman and Emerson Elliott, of the NIE Planning Unit. The avowed purpose of this visit was to express an interest and concern for the ERIC program, from the standpoint of the ERIC directors, as the management of ERIC was being transferred from OE to NIE. The group took no position on the future of ERIC other than to offer a willingness to supply any kind of information that Planning Unit might need. *"We were somewhat appalled"*, Erickson wrote to the directors later on, *"by the fact that they seemed to be using the Rand Report as their only documentation as to the past, present and future of the ERIC system. At their request we left them a copy of the Howe Committee report which had been presented to Lee Burchinal earlier in the day"*. Another impression that Erickson picked up from this meeting was that Silberman and Elliott were debating whether dissemination should have a visible unity within NIE or whether it should be spread out as a divergent obligation among all NIE major program efforts. [29] What impact this might have on the ERIC system was not clear.

Ever since the formation of NCEC, in June 1971, the ERIC system had been operating under the dark cloud of budget limitations. That cloud became even darker with publication of the RAND study and its attendant implications for some degree (perhaps a significant degree) of reorganization of the clearinghouse structure and attendant changes of information system strategies. The dark cloud followed ERIC in its journey from OE to NIE in August 1971; however, the continuation of that story should rightfully appear in the following chapter.

The Fry Study

During the Spring of 1970, ERIC had contracted for a study of ERIC products and services, the principal investigator being Bernard M. Fry, Dean of the Graduate Library School at Indiana University. One of the unknown quantities which Central ERIC (particularly Burchinal) had been interested in was some measure of how the educational public was actually utilizing ERIC. Who was using ERIC? How many people were using ERIC? The actual numbers were difficult to acquire. In fact, even the Fry study team was apprensive about the answers they found. Fry stated that:

> *"...although the survey instruments employed by this study comprehensively solicited response from the principal educational communities, the study team is convinced the field is so vast and diverse that only gross estimates of ERIC users can be extrapolated to an unmeasured universe of users".*

With this note of caution, the team did prepare estimates of total ERIC utilization from questionnaires which, *"...represented estimates of observed use by library and information center staff"*. Following are two of the more interesting tables from the report:

ERIC PRODUCTS

PRODUCT	ESTIMATED TOTAL NUMBER OF USERS PER WEEK
RIE	190,590
CIJE	138,330
Microfiche	178,190
Hard Copy	135,260

ESTIMATED TOTAL NUMBER OF USERS SERVED PER WEEK BY OCCUPATION		
OCCUPATION	ESTIMATED NUMBER OF USERS PER WEEK	PERCENTAGE
Teacher	41,175	21.2
Adminsitrator	21,142	10.9
Graduate Student	43,120	22.3
Undergraduate Student	77,585	39.8
Researcher	5,952	3.1
Librarian	5,255	2.7

The above charts represent a somewhat astonishing total when one multiplies the number of users per week by 52 weeks. The grand total amounts to over 10,000,000 users per year! Even when one counts every person as using the system ten times per year, the total of 1,000,000 users is still amazing. But no matter how one evaluates or counts the data, the Fry study revealed that the ERIC system was a valuable resource to people in the educational world and it definitely was being used.

The entire study which Fry and his associates published consisted of five volumes reporting on very extensive survey instruments, details of how the study was conducted, actual collected data, and a long list of recommendations*. There was, however, an interesting set of "general" findings, which appeared as follows:

> *"The principal indicators of increased use and user satisfaction with ERIC products and services were all positive. Whether measured quantitatively by the remarkable growth and increased use of ERIC publications, or qualitively by the stress of synthesis and evaluation and by emphasis on the dissemination of information as well as document delivery, ERIC has come a long way toward achieving its overall goal of providing local access to needed information that can be used in developing more effective educational programs.*

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*These are too lengthy to be included here. The Fry study is in the ERIC data base. See ED 060 922 through ED 060 926.

> *"Users judged the ERIC system as a whole very favorably. Two-thirds considered the system very useful. Next to professionals in libraries, teachers, research personnel and administrators among occupational groups ranked the ERIC system highest in value.*
>
> *"Nine of every ten individual users reported that they obtained information through the ERIC system which they probably would not have found otherwise. For most of these users, the frequency of this experience varied between one and ten times.*
>
> *"Seven out of ten users reported information obtained from the ERIC system resulted in improvements in the way they do things.*
>
> *"More than one-half of the individual users reported that ERIC had helped them avoid duplication.*
>
> *"The main purposes for which ERIC publications were used included: keeping abreast in a field, research projects, program improvement, assignments and term papers, and curriculum development.*
>
> *"Requests for clearinghouse user services increased by three-fourths between 1969-71. The educational practitioner accounted for the greatest increase in number of requests. Among groups requesting information, roughly three-fourths of the requests came from educational practitioners (45%), educational decision-makers (15%), and information specialists (13%).*
>
> *"ERIC's growing involvement with professional organizations has been productive in intellectual bridge-building. In the period covered by this study the following results were observed: 700% increase in meeting participation, 600% increase in joint publication, and 300% increase in other affiliations.*
>
> *"Although research and publication variables revealed different evaluation of particular ERIC products and services, no such differences were apparent with respect to the overall evaluation of the ERIC system."* 30

The Fry report, which appeared in March 1972, was a useful study. It reassured Central ERIC management with the comforting thought that the effort, the dollars, the struggle, were all worthwhile.

CHAPTER VI. ERIC IN NIE, 1972-1979

The relationships among research, development, and operational programs (whether in the military, scientific, or social sectors), are fascinating aspects of recent American history. In the field of education, the functions of federal research and development are relatively new endeavors. How the Congressional and Executive branches of government handled these functions is an absorbing story —— assuming one has at least some interest in social, legislative, or educational history. Particularly engrossing is the story of the creation of NIE and how it managed to survive its first five years as an organizational entity under the umbrella of HEW. A colorful, fully documented, and well written history of NIE was published in 1978 under the title *Organizing An Anarchy.**

The genesis of NIE can be traced to President Nixon's White House staff, specifically those who were members of a Working Group for Education, which was headed by Edward Morgan who, in turn, worked for John Ehrlichman, chief aide to the President. A part of this Working Group was a subunit called the Domestic Council, the chairman of which was Daniel Moynihan. The Council members believed that some basic answers might be found the the nation's educational ills if greater emphasis were placed on research. Their efforts resulted in President Nixon's March 3, 1970 message on educational reform, during which he stated: *"I propose that the Congress create a National Institute of Education as a focus for educational research and experimentation in the United States."*

In April 1970, Roger Levien, of the RAND Corporation, began preliminary planning for NIE; a year later, Harry Silberman, of the System Development Corporation, joined the OE staff and became head of the Planning Unit for NIE. Legislation for NIE was included in the Educational Amendments of 1972, which Congress passed and President Nixon signed into law in June 1972. On August 1, 1972, NIE began its operational life. As of that date, Emerson Elliott became Acting Director; he was soon succeeded by Thomas K. Glennan, formerly Assistant Director for Planning, Research, and Evaluation of the Office of Economic Opportunity.[1]

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*Sproull, Lee; Weiner, Stephen; and Wolf, David, *Organizing An Anarchy*, University of Chicago Press, 1978.

Effective August 1, 1972, all twenty-six people on the NCEC staff under Burchinal were transfered *in toto* to NIE. The new agency began operations in the Reporters Building, located on the corner of 7th and D Streets, in Southwest Washington; however, NCEC had already transferred to this location the previous March. The first organization chart for NIE was very simple. It merely reflected a series of 11 equal units, with no hierarchical structure; all organizational activities reported directly either to the Director or his deputy. ERIC was organizationally located inside the block designated "Dissemination (NCEC)". But organization and reorganization soon became a seemingly constant NIE preoccupation. During the first two and a half years, five major modifications to the initial structure took place.*

As early as August 11, Burchinal informed the ERIC Clearinghouse directors that *"enough of the dust has settled from the initial establishment of the National Institute of Education, so that I can give you a few solid facts."* He told them that NCEC, including ERIC, had been transferred intact to NIE, but hastily indicated that he did not yet know exactly how his organization would function under NIE, because it was understood that the new NIE Director must have an opportunity to evaluate and modify all existing programs in consonance with the ultimate mission, function, and programs of the new NIE. *"Accordingly,"* Burchinal wrote, *"NIE staff are preparing issues and options papers on program plans, and budget alternatives; ERIC included."*

One such study, "NIE Briefing Paper on NCEC Programs," had already surfaced in late July. In this paper, Burchinal described in general terms his dissemination philosophy and accomplishments, including those of ERIC. *"NCEC has practiced what it preaches,"* Burchinal stated. *"Program implementation should be based on the best available knowledge. Thus, formal synthesis studies are used, as well as panels of experts. NCEC consultants read like a Who's Who in educational dissemination R&D. Moreover, in the past several years, over 20 experts from science, business, medicine, and other fields have contributed to NCEC plans."*

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*See Appendixes.

Aside from plans, programs, and budgets, Burchinal wanted NIE officials to know that he had assembled a competent staff.

> *"The NCEC staff is a small, highly specialized group of dissemination specialists with widely different, but interrelated competencies. Each person was recruited to bring a specific needed talent. Their original skills have been augmented by additional formal training, supervised inservice development, considerable field and monitoring experience, and different, but complimentary skills. In addition to teaching and educational administration, competencies include information science and systems, retrieval, communications, behavioral sciences, R&D, law, publications, and mangement."*

Not only did he feel he had an able group of employees, but Burchinal felt staff morale was very high.

> *"Continuity in management and staff can lead to stagnation and mediocrity or to esprit de corps and high productivity. NCEC is an example of the latter. With no staff additions in three years and only one loss, due to medical disability* [Eller], *NCEC staff remain dedicated dissemination professionals....They believe in each other and their work. An OE fellow who just left OE after his year stay, referred to NCEC as an 'island of competency' in OE."* [3]

The Policy Vacuum

Still another directors' meeting in 1972? Yes. This one, of course, was the first held under the auspices of NIE. It was important that Elliott, still the Acting Director of NIE, was present at the meeting, which was held in Washington on October 12. No one was naive enough to think that Elliott had any earth-shaking news about the destinies of ERIC or the role of dissemination in NIE. Yet it was pertinent and interesting to listen to what he did have to say. For example, he made a succinct statement as to the current four purposes of NIE:

1. to solve educational problems;
2. to improve educational practice;
3. to strengthen the technological and scientific foundations in education;
4. to establish an effective national research and development effort in education.

Elliott described dissemination as *"a bouncing ball,"* which was officially transferred to NIE *"late in the game."* The function of dissemination had been thrust upon NIE by Congress. NIE planners had only reached the level of asking questions, such as: should NIE have "all" educational dissemination functions, or should some remain in OE? Because many of the OE programs were involved with one phase or other of dissemination, this was a tough question. It probably would not be answered quickly. As for ERIC, Elliott did not know what it would look like three years from now; it was possible, he thought, that ERIC might be changed very little.

Most of Elliott's remarks to the directors dealt with the larger concept of NIE: its background, the anticipated role of the NIE Council, the budget, the organization. What NIE planned to do in the immediate future was a considerable amount of planning and organizing, even though, he reported, in the past two and a half years there had been 93 planning papers which dealt with NIE. Very few of these, if any, dealt with dissemination.

Later on, Burchinal gave the directors some of his impressions about the new NIE. No one was making any decisions; a director had not yet been appointed. All kinds of ideas were being looked at. Much confusion existed. A rumor afloat, Burchinal told them, was that there was a feeling among NIE planners that no one associated with any previous program was competent.

Could the directors themselves, perhaps as a group, make any contributions to NIE planning? Burchinal said to feel free. He saw no objection to the directors becoming members of NIE planning teams or panels. Nor did he see any restrictions against their forming ad hoc groups for the presentation of issue papers, or forming a task group among themselves to review or initiate plans on dissemination activities. In fact, he thought the directors should maintain their current "Committee of ERIC Directors" as a formal body which could respond to NIE planning efforts as the opportunity arose.

The remainder of the meeting was consumed with a few mundane administrative and system announcements—mostly irrelevant to the important uncertainties in the minds of all present.[4]

Events during the remainder of 1972 did little to brush aside those uncertainties. Toward the end of the year, however, Burchinal received word that he would have a chance to display the wares of dissemination and ERIC to Glennan and other NIE principals. Arrangements were made for him to give them a briefing on January 5, 1973. He prepared an excellent briefing paper which contained a narrative overview accompanied by detailed sets of attachments with bountiful charts, graphs, and statistics about ERIC and the other activities coming under the general rubric of dissemination. In as realistic a manner as possible, Burchinal cited the accomplishments of NCEC and its antecedent organizations, spoke of the shortcomings of ERIC and dissemination, and told what was being done and what could be done to alleviate the shortcomings, as well as what was needed for further enhancement and strengthening of dissemination programs.

Those present at the briefing generally agreed that the NIE managerial staff was not sympathetic to Burchinal's presentation. The questions they asked were often tinged with criticism. It appeared obvious that Glennan and his staff still had considerable doubt as to how to utilize Burchinal's activities within NIE's operational program.[5]

This presentation proved to be Burchinal's requiem in NIE. The next month, February, Burchinal left to become head of the Office of Science Information Service at the National Science Foundation. The authors of *Organizing An Anarchy* summed up the fate of Burchinal and his dissemination activities thus:

> "*After the transfer* [to NIE], *the director of the dissemination group, Lee Burchinal, found himself and his group shut off from the top management. Glennan and Elliott took the view that dissemination was an issue to be studied. They believed that Burchinal's program, which was based on the assumption that dissemination was primarily an issue of information transfer, needed reassessment, and that Burchinal needed to be redirected. Unwilling to see his program studied to death, Burchinal left NIE, and his group did little more than mark time for its first year at NIE.*"[6]

In April, Samuel Rosenfeld arrived at NIE to become the new Deputy Director for Dissemination. Rosenfeld came from the National Aeronautics and Space Administration where he had been head of Information Science and Mathematics Research, and more recently had been a research scientist in the area of cognitive processing and artificial intelligence.[7]

Rosenfeld's first exposure to the ERIC directors came at a conference held in Chevy Chase, May 23-24. In fact, he was the first speaker on the agenda. The principal direction of his remarks were contained in a list of ten questions he posed to the directors. The questions were not intended for discussion at the meeting; instead, they indicated the direction of Rosenfeld's thinking and, he hoped, would be considered as distinct problem areas for study or would be seriously considered in the conduct of future operations:

1. Are the right materials in ERIC?
2. What quality control is there in the construction of the data base?
3. Should the Clearinghouses serve as information retailers?
4. To what extent and under what conditions should Clearinghouses be involved in the preparation of information analysis products?
5. Should ERIC's role be expanded to include nonprint materials?
6. Is ERIC serving the clientele that it intends to serve? Who are they? How can we measure their real needs?
7. How can ERIC be made more accessible?
8. How should ERIC be organized? How many Clearinghouses are required?
9. Is ERIC making use of current technology; is it planning for future technology?
10. Can the ERIC system be made more efficient?

The Clearinghouse directors also had a message. They felt that the Clearinghouses had built up very good linkages with the state and local educational agencies and that they were capable of exerting far more influence in a substantive manner than they had been allowed to do in the past. One of their primary anxieties was whether NIE officials, dissemination proponents, or ERIC managers would take seriously their desire to participate in a continuing dialog on ERIC's potential in the broad field of dissemination and educational change. They asked not to be judged on the basis of what they considered past restraints of their capabilities, but to be allowed to develop new research strategies from in-depth studies. Also, they felt their capability to develop and perform a wide variety of user services had been restrained only by past funding limitations.

Rosenfeld and Clemens' replies to these expressions were that they agreed to a continued dialog and were receptive to new ideas or methodologies; expanding funding, however, was something they could not promise.

Next, the directors listened to Glennan, who spoke mostly about NIE, its emerging organization structure, and its responsiveness to the legislation and authority given it by Congress. Then, with respect to ERIC, Glennan made four specific points:

1. There was no plan to eliminate ERIC.
2. Thought will be directed toward improving ERIC, making it more effective, and providing quality controls for the ERIC system.
3. There may be some ERIC restructuring, along with a new definition of functions. But there is a basic need for ERIC as a core depository of knowledge, along with some associated synthesis activities.
4. He was somewhat surprised how little attention had been given to ERIC directors' insights and felt that their thinking should be an important part of NIE planning.

During the afternoon session, Hoover discussed several system matters: the on-going development of the "Policy Manual," which Central ERIC was trying to get into publishable form; the *ERIC Operating Manual*, which the ERIC Facility was giving a major revision; and the "Hall Study," which was really not a study, but a project for preparation of the *Administrative Procedures and Guidelines for ERIC Clearinghouse Management*. This would contain:

- guidelines for the preparation of clearinghouse quarterly reports;
- clearinghouse preparations in advance of ERIC Central site visits;
- procedures to follow in advance of the annual review sessions.

The manual, or guide, would also cover:

- personnel management;
- user services;
- annual renewal proposals;
- clearinghouse information analysis products.

Actually, Hall's effort was an outgrowth of the ERIC Management Review Group's recommendations for expression of clear guidelines for clearinghouse administrative procedures relative to the expectations of Central ERIC. Although Hoover, at this point in time, was pleading for expedition of the directors' input to this project, the guide was not published until almost a year later in May 1974.

During an informal evening session the directors and Hoover talked about the organization of the directors. They decided to disband the informal COED (Committee of ERIC Directors), which had originated at the February 1972 Chicago meeting, and form a new group, which was to have the authority to speak for all the directors: the Executive Council of ERIC Clearinghouse Directors. Erickson was chosen Chairman of the five-member council, which included:

- Bernard O'Donnell
  Reading and Communication Skills
- Joel Burdin
  Teacher Education
- Robert Fox
  Social Studies/Social Science Education
- Robert Howe
  Science, Mathematics, and Environmental Education

Hoover and the directors drew up a long list of 24 items, including problem areas, areas for improvement, and possible new directions which the directors and Central ERIC would work on as time permitted.

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* Membership on this council changed frequently in the ensuing years.

At this session there was a development which was an attempt to improve communications among the Clearinghouses and with Central ERIC. Cohen, from the Junior Colleges Clearinghouse, presented the first issue of the *ERIC Report*. This was a bimonthly publication, well put together, containing newsworthy items as well as accounts of special Clearinghouse activities. A problem with the publication, however, was the very real possibility that it must receive official publication sanction from HEW and the Office of Management and Budget. Several issues later, it had to be discontinued when budgeting also became a problem.[8]

Had the policy vacuum been filled at this directors' meeting? Were the statements of Rosenfeld and Glennan indicative of clear new directions for ERIC? The answers were not crystal clear. But Glennan's attitude toward ERIC was certainly not inimical, not threatening. He reassured the directors that there was no thought for eliminating ERIC; as far as changes were concerned, he talked only in terms of improvement. Furthermore, he felt there was a *"basic need"* for ERIC. Thus the only uncertainty lay in his statement about *"restructuring"* and the possibility of *"a new definition of functions."* These latter statements were easily understandable in view of his knowing about upcoming combinations of clearinghouses, on the one hand; on the other hand, he did not have a clear understanding as to how ERIC would fit into the overall NIE dissemination picture. No one did.

But there was obviously a new spirit at this directors' meeting. No wrangling about the RAND report, no contentious debate about differential funding, no disputes about revolutionary structural changes in clearinghouse organization.

Attitudinal changes were also obvious in a memo which Hoover delivered to Rosenfeld only one month later, June 14, 1973. Following discussions with the directors, dissemination task force members, and his staff, Hoover prepared a synthesis of plans he had in mind for ERIC. Actually he tagged these plans as being specific goals for FY 1974. But their breadth and insight gave them a benchmark characteristic for a period far beyond the following fiscal year. He listed them as a series of eight objectives:

"1. ERIC will continue to be integral part of an overall NIE dissemination effort.

2. There must be a continuous strengthening and refinement of ERIC as the national educational document information system.

3. ERIC shall provide ready access to needed information through a comprehensive national report storage and retrieval system using the latest technological advances at the greatest cost benefits to the ultimate user.

4. The system/network will remain flexible and responsive to the rapidly changing needs of ERIC's various user groups.

5. The system must aid in increasing the relevance of documents retrieved for the information needs of community leaders, the public, and educators involved in local educational renewal.

6. Where appropriate, ERIC must be involved with the applied research efforts for improvement in communication.

7. A continuous self-evaluation and improvement program will be launched.

8. ERIC will continue its information analysis efforts, synthesizing, analyzing, and interpreting the data base so as to package the information in a more comprehensible form for the education information user."

Following this statement of objectives, Hoover appended a long list of individual items he thought might be accomplished to carry out the objectives. This was an important list* for several reasons. First, although they were generated by Hoover as anticipated accomplishments for FY 1974, many of them carried over into future years. Secondly, this procedure of listing possible future tasks and improvements for ERIC became habitual with Hoover as a method of directing effort, as well as a way of expressing budget justifications.

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*This list of items is cited in its entirety without comment. Typically, most of the items, but not all, were pursued to completion. Some were dropped. They are displayed here in the spirit of illustrating the way in which Hoover was influencing ERIC and the directions in which he was moving.

"Improvements

1. Clarify the government printing regulations as they apply to ERIC publications.
2. Develop standardized site visit procedures.
3. Revise the operating manual with sections for policy, administrative procedures, acquisitions, selection, and input.
4. Develop a clear statement of policy for RIE input.
5. Develop a consolidated mailing list.
6. Establish a process for purging the Thesaurus.
7. Establish a process for purging and standardizing the identifier list.
8. Develop workshop packages for use with small groups.
9. Improve the data acquisitions list.
10. Improve inter-clearinghouse communications.

New Items

1. Investigate the possibility of a cost recovery program (revolving funds) in clearinghouses for products and services.
2. Develop a consolidated professional meeting calendar.
3. Develop and maintain a monitoring program for clearinghouse products—Central ERIC and clearinghouses.
4. Clearinghouse budgets to include funds for involvement in network committees.
5. Implement a tagging of RIE input (a form of file partitioning).
6. Develop mini-collections for isolated LEA's and developing nations.
7. Develop a new ERIC exhibit.
8. Implement a budget negotiations plan (in contrast to supplying a 'mark').
9. Provide guidelines for refereeing clearinghouse products.
10. Investigate the feasibility, and possibility, of having RIE published in the private sector at no cost to the government.

Studies Without RFP's

1. *Clearinghouse linkages—with SEA's, organization, users, etc.*
2. *Accessibility of ERIC products and services.*
3. *Feasibility of developing a non-print data base.*
4. *Feasibility of developing a data base of research raw data.*
5. *Investigate gaps in ERIC's coverage.*
6. *Refine and define user services, possibly expand these.*
7. *Investigate the possibility of having journal articles on microfiche.*
8. *Develop systemwide multi-discipline products and reference tools.*
9. *Investigate the feasibility of applying technology to clearinghouse operations (OCR (input, terminals for retrieval).*

Studies with RFP or Contract

1. *Change CIJE/RIE formats—eliminate use of group codes, possibly add an index.*
2. *Investigate the readability level of RIE abstracts (unsolicited proposal).*
3. *Develop a sensing network."* [9]

Beginning Operations Under NIE

The temporary organization chart for NIE was only a transitional vehicle until Glennan arrived and had reached a position where he was familiar with NIE's problems. Accordingly, a new organization was announced in March 1973. This arranged the Institute into seven programmatic "Task Forces," including one for Dissemination. But the ink had not dried on this concept before it was changed. Another chart, issued in May*, displayed a concept of six offices, one of which was the "Office of R&D Resources," with Clemens as the Acting Associate Director. This office contained four "task forces" of which "dissemination" was one. Rosenfeld became Clemens' deputy and also served as chairman of the Dissemination Task Force.[16] In this May 1973 organization's chain of command, Hoover reported to Rosenfeld and Clemens. Marron's role in NIE was somewhat unclear, with no specific organizational responsibility. He became involved with several study activities and served for a time as project monitor for the ERIC Facility and EDRS. Marron retired from the Civil Service in 1974.

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*See Appendix for NIE organization charts.

What was next on the ERIC operational agenda? Hoover issued a status report at the end of May 1973, which explained ERIC's immediate status and plans:

> *"The transition from OE to NIE has had no effect on the structure and basic operation of the ERIC system....There are, however, some minor modifications in the offing. The machinery is in motion to reduce the number of ERIC clearinghouses, through consolidations, from 18 to 16. Shortly, proposals will be solicited for a contractor to operate:*
>
> *(1) a combined clearinghouse on media, technology, library and information sciences, and*
>
> *(2) a career education clearinghouse which would include the areas of vocational, technical, and adult education.*
>
> *It would be incumbent on the operators of the combined clearinghouses to cover the literature in all of the areas presently being processed into the ERIC files. While no other basic changes are planned in the near term, it is to be expected that as NIE formulates its dissemination programs, some modifications or readjustments to the ERIC program are likely to result."* [11]

Of the two competitions which Hoover mentioned, that for a combination of the two information-type clearinghouses——with the new title of Clearinghouse on Information Resources——proved to be the far more routine. The RFP came out about August 15, 1973; the proposals were due by October 11; the evaluations completed around December 1; and the new contract became effective January 1, 1974.[12] The contract was awarded to Stanford University, which previously had held the contract for the Clearinghouse on Educational Media and Technology.[13]

The other competition which Hoover mentioned proved to be another matter: it became very controversial. The new activity was slated to be known as the Clearinghouse on Career Education and combined the functions of two existing clearinghouses:

1. Clearinghouse on Vocational and Technical Education, which was located at Ohio State University's Center for Vocational and Technical Education, and had been a part of ERIC since March 1, 1966.
2. Clearinghouse on Adult Education, which was located at Syracuse University, and had been a part of the ERIC system since June 1, 1967.

The NIE Contracts Office issued the RFP on June 1, 1973. The response was considerably greater than for most ERIC competitions——a total of 14 organizations sent in proposals. Smardak, the ERIC monitor for the competition, selected a list of ten people to evaluate the proposals. Four of them were from the Office of Education, four from Central ERIC, and two from NIE's Office of Programmatic Research and Development. [14] The first screening of the proposals resulted in five of them being considered to be in the range for further contract negotiations. [15] Each of these five then submitted its "best and final offer." A review of the final documentation resulted in an evaluation which assigned equal qualification status to both Ohio State and Northern Illinois University.

The HEW procurement regulations stipulated that in the event of two bidders being equal——or nearly so——the selection should be made on the basis of the budget offerings. However, one small formality still had to be exercised. The ERIC RFP stipulated that the contract winner had to have adequate proposed facilities in which to operate the clearinghouse. Many site visits had been made to Ohio State and that facility was well known; however, Smardak had to make a hurried trip to DeKalb, Illinois to inspect their proposed on-campus facility. Smardak visited Northern Illinois on August 20 and phoned Hoover with his impressions. Time was growing short because it was expected that the contract award would be made prior to September 1. [16]

A final decision of the evaluation team resulted in the selection of Northern Illinois University as the contractor. Both Ohio State and the winner were notified of the decision. Before the award document was signed, however, Ohio State announced its intention to submit a formal protest and requested a General Accounting Office review of NIE's award procedures. The NIE Contracts staff and HEW's General Counsel conducted an extensive inspection of the Institute's evaluation procedures, decided they were proper, and the award was made to Northern Illinois on September 13.

The competition had become a *cause celebre* in those quarters of the eduational community involved with adult and vocational education. The NIE "Staff Newsletter" carried the following account:

> *"During September, NIE received more than 60 letters, many from Congressmen and Senators, concerning the clearinghouse merger. Researchers and educators were concerned about the award. Many wrote because they thought the contract should have gone to CVTE; others wanted assurance that the level of services provided by ERIC in adult, technical, and vocational education would not be reduced. The concern of the education community is understandable; after all, CVTE has served as a clearinghouse for six years.* [Actually, more than seven years]. *But people here at NIE's ORDR, who awarded the contract, think that Northern Illinois will prove itself capable in the long run and that the merger should have some positive outcomes. It means an immediate savings in NIE's ERIC funds. It will eliminate occasional duplication of efforts and loss of documents which don't readily fall into either the adult education or technical and vocational category. Perhaps most important, however, it should help to bring together related areas of education which have heretofore often seemed to be at odds."* [17]

Under Special arrangements, both the Ohio State and Syracuse contracts were continued until the end of November to allow the orderly transfer of documents and equipment to Northern Illinois.[18] Smardak's intensive staff work during this period gave considerable impetus to Northern Illinois for tooling up and starting operations on an expedited basis.

Why was ERIC not obligated to conduct competitions for *all* clearinghouses? In fact, it was; but circumstances had interfered. Back in February 1972, while ERIC was still in OE, some Congressional pressures resulted in OE's establishment of a Sole Source Board which reviewed all sole source (noncompetitive) actions in excess of $25,000. This requirement applied to all ERIC system contracts for clearinghouses and other major contracts. Hoover's first request for an exemption from the competitive route, made in March 1973, was turned down. However, a subsequent appeal, which outlined the up-in-the-air status of the clearinghouse structure (because of the RAND study), proved successful and the Sole Source Board granted a reprieve from the competition requirements.[19] Yet, when ERIC became a part of NIE, the status of the clearinghouse structure and of dissemination was still confused. So each time a clearinghouse contract was about to expire, specific approval for a sole source procurement had to be obtained from Elliott. By the end of 1973, the string was running out for this technique. The much heralded "dissemination plan" never did appear, and the sole-source argument was becoming less and less valid. Finally, the ERIC staff was forced into action on this matter.

On October 10, 1973, Hoover dispatched a memo to the Contracts Office which contained a list of all clearinghouses remaining to be funded for FY 1974; all actions would be completed by July 1, 1974. Elliott had already given this course of action his stamp of approval. The ERIC project monitors did not look forward to FY 1975——for that was determined to be the year when all clearinghouses would be placed on a competitive basis, and that meant a monumental workload. At that time each clearinghouse winner of a competition would receive a one-year contract with two options to renew. In other words, if there were no performance problems, or any other problems, the winner of a competition would have a three-year contract.[20]

Hoover and his staff worked up the budget structure for the big year of competitions. The planned figure for FY 1975 was $4.5 million, which would allow substantial increases over the current plans which had the FY 1974 budget tagged at $4.0 million*.[21] In the Spring of 1974, at the May 8-9 directors' meeting, Hoover revealed the operational plan for the heavy round of clearinghouse competitions:

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*These were planning figures, and everyone considered them strictly in that light. Budget figures, both for future years and the current operating year, were always subject to change——at a moment's notice. And they did change frequently.

CLEARINGHOUSE	RFP RELEASE DATE	CONTRACT START DATE
1. Higher Education	April 11, 1974	September 1, 1974
2. Disadvantaged	April 11, 1974	September 1, 1974
3. Counseling and Personnel Services	June 21, 1974	January 1, 1975
4. Educational Management	June 21, 1974	January 1, 1975
5. Junior Colleges	July 5, 1974	January 1, 1975
6. Science, Mathematics, and Environmental Education	July 5, 1974	January 1, 1975
7. Social Studies/ Social Science Education	July 22, 1974	January 1, 1975
8. Tests, Measurement, and Evaluation	July 22, 1974	January 1, 1975
9. Early Childhood Education	August 20, 1974	February 1, 1975
10. Teacher Education	September 18, 1974	March 1, 1975
11. Rural Education and Small Schools	October 17, 1974	April 1, 1975
12. Reading and Communication Skills	November 14, 1974	June 1, 1975

Only twelve clearinghouses appeared on this list because four others (Career Education, Handicapped and Gifted, Information Resources, and Languages and Linguistics) had already been completed during FY 1974. These latter clearinghouses already had contracts which ran for one year, with two options to renew.[22]

In addition to all the plans and actions relating to clearinghouses, the three-year arrangement with the EDRS contractor was due to expire during the middle of 1974. So Marron, the current ERIC monitor for EDRS, issued the RFP and ran the competition and evaluation of the proposals. The result was still another contractor (the fourth) to handle the EDRS facility. This time the award winner was Computer Microfilm International, Corporation, of Arlington, Virginia. Contract start date was June 15, 1974.

NIE Budget Predicaments

About six weeks after the directors' meeting, on June 28, 1974, Hoover sat down to write one of his "let me tell you what's been happening lately" letters. He apologized for not writing to the directors more frequently, but

> *"...since the directors meeting in May, Central ERIC staff have been extremely busy with routine matters, budget projections, procurements, etc. As a result I have not been able to keep you informed of several developments and information items."*

Among the nine subjects he wrote about, the eighth item on the list was almost a non-news item:

> *"I have no substantive or definitive information as to the total NIE budget for FY '75. I have heard that there is a possibility that both the House and Senate versions of the NIE budget will earmark budgets for dissemination. I have heard no word about an increase in the ERIC budget other than an increase of approximately 10% which figure I reported to you at the directors' meeting."*

He gave the letter to the typist late in the day and it was ready for his signature the next morning. But soon after he came to the office he heard that word had filtered down from the "Hill" that the NIE budget might be in trouble. So Hoover appended a note on the bottom of the letter: *"Item 8 may change dramatically with last evening's House action (80 million---no earmarked funds)."* [23] This figure appeared to be a drastic revision of the $130 million which NIE had requested; and the lack of specific "earmarked" funds for ERIC likewise could possibly reduce ERIC's budget to a point where it would seriously jeopardize the competitions which were already in midstream.

The entire Summer and Fall of 1974 were extremely difficult for all NIE staff members. Every day was an uncertain day.* The absolute nadir came on

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*The story of the FY 1975 appropriation for NIE is an intensely interesting tale for anyone even remotely interested in the budget process at the Congressional level. Only those portions affecting ERIC and the "big picture" of NIE's involvement are touched upon in this narrative. For further details, with sprightly and fascinating quotations from the *Congressional Record*, see Sproull, Lee, et al., *Organizing An Anarchy*, pp. 76-105.

September 11, when the Senate Appropriations Committee recommended "$0" for NIE![24] But even before then, Congressional Committee heat became so intense that Glennan, on August 28, sent his resignation to President Ford. The effective date of his leaving was to be October 15.[25]

Central ERIC staff could do absolutely nothing, of course, but sit back and wait to see how deeply the budget axe would bite into their program. The only constructive measure Hoover could take was to prepare budget after budget at different levels; for once the appropriation was passed, it was wise to have an instant appropriate operational budget plan in his pocket.

But the ERIC directors *did* take some action. It should be clearly understood at the outset that Hoover, Rosenfeld, and Clemens *did not* either encourage or condone this action. They knew about it; yet they did not feel, as a matter of official ethics, that they could either stop it or promote it. Their stance had to be entirely impartial, completely neutral. And it was.

It was Erickson, almost immediately following the June 28 House action, who got the ball rolling. He wrote a letter to all directors which enclosed pertinent sections of the *Congressional Record* and other materials to apprise the directors of the documentary background. He stated:

> *"The FY '75 NIE appropriation has been voted at $80 million by the House of Representatives. The Senate has not yet voted on a figure but it's not expected that they will recommend more than the House. The House report language on dissemination does not mention ERIC and criticizes NIE's dissemination efforts as follows:*
>
> > *'The Committee believes that the Institute has not fully carried out the intent of Congress to assist state and local education agencies through dissemination of research information and newly developed programs and practices. The Federal government had begun this assistance under the Cooperative Research Act through programs formerly conducted by the Office of Education and transferred to the Institute. The Committee intends that the $12,850,000 included in the bill for dissemination will be used primarily for grants and contracts directly involving state and local education agencies to develop systems for dissemination, including information systems, consumer information, access to products,*

> *and state education agency linkages such as extension agents or teacher centers. Funds are to be used directly to strengthen the Federal-State-local partnership in improving State and local school systems, and are not to be used in a restrictive fashion which primarily benefits contractors rather than State or local agencies.'"*

Erickson pointed out to the directors that any action they took must be accomplished most expeditiously if they were to succeed in making some input prior to the reconvening of the Senate Appropriations Subcommittee which would be meeting on or shortly after July 8. Erickson wrote:

> *"The most effective way to do this, would be for you to generate letters, calls, personal contacts, etc. from your sponsoring professional organizations——also, letters from significant user groups such as State dissemination groups, and LEA's and information resource centers would be appropriate——directly to members of the Senate Committee on Appropriations.*

Also, Erickson advised them that:

> *"...the best tack to take would be to support a full and even broadened earmarked dissemination authority with specific mention of ERIC particularly as it supports state dissemination efforts."* [26]

One of the directors, Howe, hastily prepared a sample statement about the significance of ERIC, which the leaders of professional groups or associations could use as background for their verbal, written, or telegraphic contacts with members of Congress. In part, it read:

> *"Therefore, we strongly recommend that NIE be provided funds for dissemination of Education Information. Such funding should include provisions for the national ERIC system and for state and local systems. It is estimated that 13.2 million dollars would provide minimal support for what has been requested by users. Of this, a minimum of five million dollars is needed for maintenance and minimal improvements in ERIC."* [27]

Erickson received reports from directors who had taken action to contact educators holding important positions, who, in turn, sent statements or talked to various key members of Congress.

This was a fine example of American democracy in action——a real grass roots effort to contact Congressional leaders and influence pending legislation.

But it appeared that this spirit was crushed when the following notice appeared in *Education USA* under the dateline of August 26:

> *"A Senate appropriations subcommittee has dealt the faltering National Institute of Education (NIE) another blow by reportedly cutting its budget to $65 million....A cutback of $65 million would be disastrous according to NIE officials.*
>
> *Elliott said:*
>
> > *'If we're to be responsive to criticism of NIE we need to move in the area of dissemination.*
> >
> > *'We can't do that and meet our commitments if the appropriation base is less than our commitment base.*
>
> *John Christenson, NIE budget officer, said:*
>
> > *'A $65 million budget would be devasting. Programs that Congress is familiar with——labs and centers, experimental schools and ERIC centers——are going to suffer under a budget like that.'"* 28

Then, as mentioned earlier, on September 11, the Senate Appropriations Committee recommended zero dollars for NIE. Finally, on November 21, the Congressional Conference Committee came up with a compromise figure of $70 million; this was the sum that actually appeared in the signed appropriations. 29 Dissemination? It was reduced to the lowly figure of $5,871,000. 30

During the Summer and Fall of 1974, the battle of the budget continued to occupy the attention of Hoover, Clemens, and the entire staff of the Office of Utilization and Resources.* There were numerous "chalk talk" sessions in Clemens' office——free wheeling, brainstorming, speculative discussions in which they examined all possible alternatives of how to react operationally to various theoretical budget levels. At the end of July the picture was already sufficiently dismal that ERIC managers assumed they would not obtain the planned $4.5 million; they would be lucky to receive anything over $4.0 million. And that lower level created problems; it also required retrenchment of current activities.

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*See Appendix for organization chart of January 1974.

After reviewing all alternatives, Hoover dispatched another plan to Clemens in the latter part of July. He listed four steps he could take which would reduce the ERIC budget by about $271,000. The first three were relatively painless; the fourth was distressing:

1. Eliminate all funding of local files. (This referred to costs involved in those clearinghouses which maintained a hard copy library consisting of their acquired documents, copies of items they had placed in RIE, and other special items relating to their scope of interest.)
2. Place a limit of $15,000 on clearinghouse expenditures for the preparation, publication, and distribution of newletters, brochures, and bulletins.
3. Limit each clearinghouse to an annual amount of $10,000 for efforts involved with publicity and public relations.
4. Combine the Higher Education and Junior Colleges clearinghouses in FY 1976, but maintain the Junior Colleges organization on a minimum budget for the remainder of FY 1975.[31]

The planning for the fourth item became very convoluted because of the realities of the political situation in the higher education and junior college fields, the unrealities of the NIE budget, and the somewhat complicated scheduling of actions required to complete the plan. Whatever action Hoover and Clemens would take had to have the approval of the new Associate Director of the Office of Utilization and Resources, Senta Raizen. She had joined the NIE staff on June 18, coming from the RAND Corporation. Formerly she had spent nine years at the National Science Foundation in the area of science education programs; also, she had participated in the NIE Planning Unit as the senior author for the report, *Research and Development in Education: Analysis and Program Plan.*[32] Partly because she was still not completely familiar with the details of ERIC and partly because the situation was complicated, Hoover and Clemens presented her with a memo which included a complete and complicated range of options:

"1. *Continue to support two separate clearinghouses.*

2. *Continue the Higher Education Clearinghouse, withdraw the Junior College RFP, and expand the HE scope to include JC in December of this year.*

3. *Cancel the present HE procurement (now ready for award) and continue the existing contract to December 31; cancel the JC RFP and immediately begin competition for a combined clearinghouse.*

4. *Maintain both clearinghouses in FY 1975. In FY 1976, extend the HE contract for four months to December, 1975 and conduct a competition for a combined clearinghouse to begin January 1, 1976.*

5. *Award the HE contract now; cancel the JC RFP and extend the existing contract 8 months to August 31, 1975; conduct a competition for combined clearinghouse operation in the Spring of 1975."*

Each option had accompanying narratives in three categories:

- fiscal implications;
- advantages;
- disadvantages.

Clemens and Hoover recommended the fifth option. Raizen agreed.[33] Accordingly, Hoover transmitted the substance of the existing budget status to the directors on August 7. He warned, however that "*...all of our present plans are predicated on the $80 million figure approved by the House, with the assumption that the Senate will approve the same amount. If this assumption should prove wrong, it's 'back to the drawing boards.'*"[34]

In the deepening gloom of Congressional action during the Fall, Hoover did, indeed, have to go back to the drawing boards. The chalk talks continued; the ERIC staff again became involved in detailed analyses of all clearinghouse functions and alternatives on how to allocate various levels of funding. Hoover's job was the toughest. He had to debate budget details with Clemens and Charles Haughey, both of whom were vitally interested in solidifying and expanding dissemination efforts in the State Education Agencies.

In the latter part of October, Hoover made another pitch for ERIC, this time being forced to include three possible funding levels: $3.5; $4.1; and $4.5 million. In a memo to Clemens, Hoover stated:

> *"ERIC funding was cut 20% 5 years ago; a straight line for 3 years and a 5% cut last year for a total of about 65%. While cuts (actual or results of inflation) were being made:*
>
> - *the volumes of RIE and CIJE inputs continued to increase yearly,*
> - *the number of Standing Order Customers almost doubled,*
> - *users can be estimated to have increased twofold,*
> - *several system improvements (controls and procedures, manuals, computer software) have been made,*
> - *computer searching is growing geometrically (virtually none 5 years ago),*
> - *linkages with professional organizations have been strengthened (expressed in dollars in printing, marketing and distributing products),*
> - *more contacts by CHs with users for training,*
> - *training packages developed,*
> - *a number of spin-off products and tools have been developed and help),*
> - *and I believe some modest improvements in quality control procedures."* 35

This list was telegraphic, but Clemens was aware of the complete details of each and every item, once reminded of the item itself. Then Hoover, again in abbreviated form, summarized the effects of the three possible funding levels:

> "1. *At 3.5, a loss in each CH of at least one FTE, in the ERIC Facility (LEASCO) 4-5; degradation of data base quality; reneging on professional organization commitments; linkages reduced somewhat; reduced products and services, plus the elimination of JC; no input study.*
>
> 2. *At 4.1, approximately a status quo budget, minus some needed improvements (user services, system products reduced, input study).*
>
> 3. *At 4.5, restoration of data base, user services and acquisition efforts at LEASCO; an increase in CH's of workshops (training), limited computer searching, and the investigation of expanded data bases."* 36

As indicated previously, the NIE budget for $70 million became solidified by early December. What was the decision on the ERIC budget? Raizen and Clemens decided to distribute $4.1 million to ERIC of the less than $6 million for dissemination:

- First, it was late in the fiscal year for accomplishing the grants competitions for the state dissemination program, whereas the ERIC program could easily and quickly obligate the money.
- Secondly, Hoover's arguments about inflation, the "straight-line" budgets for ERIC, and the real needs for improvements in ERIC had been convincing.

When the $4.1 million level for ERIC became a fact, the first thing Hoover did was to call Cohen at the Junior Colleges clearinghouse. He was happy to tell Cohen that he had dropped plans to merge that clearinghouse with Higher Education; instead, Cohen's clearinghouse would be funded for an additional eight months, to September, 1975, and in March or so, ERIC would issue an RFP for a competition solely in the area of junior colleges. That was the only remaining competitive action not yet accomplished.[37] The competition resulted in the Junior Colleges clearinghouse remaining at UCLA.

Central ERIC Operations, 1975

On March 18-19, 1975, a directors' meeting took place at the Ramada Inn, in Alexandria, Virginia. This was the first such meeting that Raizen had attended; her brief report was largely confined to the FY 1976 budget. She stated that her dissemination organization had requested $18.3 million, which was 24 percent of the total NIE request for $80 million. Of the dissemination amount, ERIC's allotment was scheduled for $4.5 million. But the ERIC directors did not exactly greet this news with great joy; they knew that NIE budget plans were too vulnerable to the whims of Congress and always subject to internal change.

The larger portion of the $18.3 million was scheduled for all other dissemination activities. Charles Haughey, head of the Communication and Linkage Branch and Charles Hutchins, head of the School Practice and Service Division told the directors of their extensive plans to lead the Institute into several directions of effort for the spread and dissemination of information to the state and local levels.

Some of the more interesting—and important—aspects of the meeting occurred toward the end of the agenda, during the scheduled general discussions as well as the informal meetings among the directors and Hoover. In these free-wheeling, no-holds-barred, get-togethers, both Hoover and the directors could engage in frank and open conversation, unrestrained by agenda items and formalities. It was in such an atmosphere that the directors expressed several of their major concerns:

1. The directors, in addition to their role as clearinghouse managers, had a strong feeling of commitment to the overall NIE thrust of national dissemination and knowledge utilization efforts. Each of them, as a leader in his field, as a senior member of his educational organization, as a prominent principal in several of his professional organizations, had considerable expertise to offer for both dissemination activities and the overall ERIC program.

2. In the past the directors felt they were relegated to a "reactive" position—being asked to respond to plans and operations already formed. They felt they could make contributions of a "proactive" nature, to represent and respond to educational constituencies.

3. They felt an urgent need for more information, particularly more current information, so they could act as an interpreter and perhaps an advocate for both ERIC and NIE. In fact, whether they sought it or not, they frequently found this role thrust upon them as principal contractors and representatives of NIE.

4. A practical problem the directors had was their difficulty in devoting any resources to issues which arose after contract renewal. Contracts always required specific statements of workload which were then tied to specific funding allocations. Was there any way around this problem? 38

Some of these sentiments were an echo, a recurring theme, in the minds of the directors. They were reminiscent of the position paper they had presented to the ERIC Central staff at the February 18, 1972 meeting held at the Brookings Institute. They were saying it yet once again: We are dedicated, involved, educational leaders who are on the front line, in constant contact with educational problems, new developments, and recommended solutions. We are eager to participate in any way we can toward the improvement and strengthening of ERIC and NIE. We think we can help you. Why don't you let us?

Hoover got the message. He had heard it many times——not only at the Brookings meeting, but in subsequent directors' meetings, at site visits and annual review sessions, during informal discussions. And he agreed. But he was faced with two problems. His supervisor, Clemens, to some degree, regarded the ERIC system as primarily a data base and felt that responsibility for decisions relating to educational change rested at the state, local, and school building levels of the nation's educational system. What was in the minds of state supervisors, local education agency heads, school principals, and the educational field agents (which were just beginning to become operational)? This was what Clemens wanted to know and react to.* And even if Clemens were interested in the problem: what was the appropriate organized or *ad hoc* methodology for advisory inputs from the directors? Completely satisfactory solutions for the involvement of the directors were never found, though not because Hoover refused or was reluctant to try to find them. He, in fact, was eager to involve the ERIC directors in every possible way and conversations with Clemens and the ERIC staff members continuously reflected this attitude. Subsequent formation of the directors' council was a partial solution.

Following the directors' meeting, all was quiet on the budget front for several months. But then, word leaked down to NIE that once again all was not completely rosy at the Congressional level. And once more Hoover was obligated to justify his FY 1976 budget plan for $4.5 million. The question he had to answer was: What would be the impact on ERIC of a $400,000 cut? Could he live another year at $4.1 million? Hoover sharpened his budget pencil again, checked last year's budget justification language, dusted off some of the old arguments, updated them with an intensified level of frustration, then applied all of the above to the task at hand. His reaction, in part, was:

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*This is a simplified description of Clemens' position. He was a deep and astute student of dissemination and had devoted a great deal of time to reading, thinking, and working in the field. Unfortunately, he did not write extensively on the subject prior to his death on March 20, 1977.

> "1. *Another year (the 5th) of straight line funding during continued inflation, rising personnel costs, rising overhead rates, etc., means labor intensive contracts have continually experienced* *reduced* *availability of effective dollars.*
>
> 2. *Aside from reduced system wide morale, there will have to be reductions in products and services.*
>
> 3. *...Other intangibles will, in my opinion, result in serious political repercussions. (Especially one year after intensive efforts to aid NIE last fall.)"*

Hoover was aware that ERIC's stature was growing among the states as an integral part of dissemination activities. He pointed out that a budget reduction would:

> *"...curtail the effect the whole ERIC system can have on educational change and improvement nationally. Its beginnings toward greater visibility will have to be curtailed."*

Also, somewhat along the same line of thought, he said that a reduction of resources for ERIC *"will allow no expansion of services and/or assistance to States and educational information centers."* 39

Even though the NIE FY 1976 budget did not increase over its $70 million figure for FY 1975, there was a substantially larger slice of the fiscal pie served to dissemination functions, which were enlarged to $8.5 million. Of this, ERIC, for a change, did receive its planned share of $4.5 million.

With no serious budget problems, with no operational crises, with no further clearinghouse competitions, the remainder of 1975 was relatively quiet. It was not calm for the ERIC staff, however. This was the period, beginning in the Fall, when the monitoring of the state communication and linkage projects became overburdensome for Haughey's Communication and Linkage Branch. Clemens decided that Smardak, Welsh, and Trester should spend about one-fourth of their time as project monitors for the grants made to various states for building their capacity for the dissemination of educational information. Chesley was assigned to divide his time equally between ERIC and the Communication and Linkage Branch. 40*

During this interregnum, one significant event took place. On May 27, the new NIE director, Harold L. Hodgkinson, was sworn into office. His credentials were solidly research-oriented, for he had come to NIE from the Center of Research and Development in Higher Education at the University of California, Berkeley. Also, he was a past president of the American Association of Higher Education.

One other 1975 event was another reorganization of NIE. Although the new plan did not significantly affect ERIC, it was interesting to note the pattern of organization and staffing for Raizen's Dissemination and Resources Group. It became evident that considerable emphasis was being given to dissemination efforts. The relevant organization chart appears in Figure 10 on the next page. One peculiarity should not be overlooked. The name "ERIC" disappeared from the formal organizational nomenclature. This was not intended to denigrate the ERIC activity; the reason was that during the uncertain planning years for dissemination, there was a possibility that the dissemination function in NIE might result in two or more "information centers" or "systems." Some thought was given, for example, to the possibility that ERIC would monitor information activities in the states once they became operational. Hence the name "Operations Branch."

Central ERIC Operations, 1976

The next event of consequence was the directors' meeting of March 2-3, 1976, held in the same place as the previous one——the Ramada Inn in Alexandria, Virginia. At that previous meething, Howe was elected Chairman of the ERIC

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*Although ERIC staff members were involved in these projects, they are not rightfully a part of the ERIC story and will therefore not be covered in this narrative.

September 15, 1975

Organizational Chart and Staffing Chart of Actual People on Board

DISSEMINATION & RESOURCES GROUP

Senta A. Raizen, Assoc. Dir.
Jack Green
Mary Ann Millsap
Dorothy Joy
Betty Baten
Maureen Treacy
Candye Williams

R&D System Support Division

Ward Mason, Chief
Bruce Craig
Rolf Lehming
William Sowers
Barbara Smith

*Same person in two capacities

Information & Communication Systems Division

Thomas Clemens, Chief
*Sam Rosenfeld
Joyce Benton
Pat Bridges

Operations Branch

Charles Hoover, Chief
Frank Smardak
Del Trester
Catherine Welsh
Frank Bryars
Barbara Sanders
*Robert Chesley

Communication & Linkage Branch

Charles Haughey, Chief
John Coulson
*Robert Chesley
Arch Steiner
Charlene Brown

R&D Staff

*Samuel Rosenfeld, Chief
Mollie MacAdams

School Practice & Service Division

Charles Hutchins, Chief
*John Egermeier
Nancy Hunt
Louise Watkins

School Development Staff

*John Egermeier, Chief

Copyright Management Staff

Morton Bachrach, Chief
Barbara Saunders

Consumer Information Branch

Spencer Ward, Acting Chief
Sue Klein
Margot Louria
Mildred Thorne
Don Fischer

R&D Utilization Branch

Thomas Israel, Chief
Debra Florence
Eunice Turk
William Liddicoet
Richard Elmendorf
Richard Lallmang
Mary Jackson

FIGURE 10: ORGANIZATIONAL CHART - DISSEMINATION & RESOURCES GROUP

Directors' Executive Committee. Several months prior to the meeting, Howe held discussions with members of the council, as well as Hoover, about the upcoming agenda. All decided that the next meeting would concentrate on a theme of system operational problems. So Howe contacted several directors and asked them to prepare issue papers. Thus, for the first time in a long time a directors' meeting became predominantly technical in nature. Practically the entire agenda focused on four principal areas:

- input;
- services;
- coverage of subject gaps in the field of education; and
- expansion of the ERIC data base to include various types of documents currently not in the system.

The latter two items were unique subjects in themselves. The former two categories included:

- topical problems relating to the necessity for two copies of documents required for input;
- the reproducibility of documents;
- copyrighted documents;
- Level III documents for RIE input;
- selective dissemination of information;
- selective free distribution of information analysis products; and
- assistance to Federal agencies on RFP's.*

The selection of such discussion points was not an attempt to duplicate the kinds of operational topics which were usually confined to the technical meetings. Instead, the directors approached these subjects more on a policy level, giving their opinion or recommendations to Central ERIC. The latter would then determine whether or not:

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*Many of these subjects, but not all, are discussed in later chapters.

- the recommendation should be adopted immediately;
- the subject should be delayed until money was available to support it;
- the subject merited further study; or
- the subject should be dropped.

Perhaps an illustration would make the point of the meeting more clear. David Tiedeman, from the Career Education Clearinghouse, wrote a discussion paper on "Expansion of the ERIC Data Bases." The paper, after discussion, listed 15 possible expansions involving materials not covered, or not completely covered in the current data base:

1. Current Project Information (local, state, regional, and Federal).
2. Interim (including annual) Reports.
3. Student Test Material, even when not accompanied by a curriculum guide, including commercial student texts.
4. Trade printed materials in education (e.g., books), provided they are available for sale.
5. Multimedia Materials (commercial and noncommercial), provided some means of availability exists.
6. Doctoral Dissertations in education.
7. Masters Dissertations in education.
8. Education Laws, including case law (state and Federal).
9. Materials published by research and development centers, laboratories, etc.
10. Publications of educational associations and professional associations.
11. Human Resources files.
12. Practices files.
13. Products files.
14. Raw Data files.
15. Computer Programs.

All of the above files, of course, were very debatable as to their value, their availability elsewhere, their format, the problems they would create for indexing and abstracting, and so on. In fact, some of these problems were discussed at the meeting. At least two items for the above list, the legal file and the practices file, were strong candidates for development. Hoover would discuss them in the future for possible actual implementation.

Soon after the meeting, Hoover's attention was once more, as usual, turned toward the budget situation. In the latter part of April, Hoover again pleaded the plight of ERIC with Clemens: *"Preliminary FY '77 budget allocations for the ERIC budget (at 4.5) indicate that all contracts will have to remain at, or below, their FY '76 levels. Since this could have deleterious effects on the system, I want to provide you with some brief observations and potential consequences."* He gave several specifics:

1. There had been an ever-increasing number of items processed for RIE. This probably was an indication of two phenomena:
   - as more people became aware of ERIC, they voluntarily sent their publications to Clearinghouses for possible acceptance and entry into the system.
   - the Clearinghouse acquisitions procedures were becoming more effective, more targeted, and were resulting in more desirable documents being received. This created a larger yearly input and required greater processing costs.
2. The projected nonmerit salary increases throughout the system was about seven percent. This was a firm figure resulting from a survey of the Clearinghouses themselves.
3. Survey information also showed something which most people in the system were aware of, but which no one had collected until just recently. Although the Clearinghouses' host institutions were contractually obligated to supply facilities, office equipment, and certain support services, all of them had done more than that for their ERIC contracts. The host institution donations appeared in four general categories.
   - personnel;
   - facilities;
   - products; and
   - services.

   When all of these categories (each with several specific areas) were totaled, the amount reached a surprising $1 million. Hoover feared that if the ERIC budget did not show some increase, the host institutions would no longer pick up the slack.

> *"In my judgment,"* Hoover told Clemens, *"the FY '77 ERIC budget should be at least 5.00. In order to try to avoid some slippage in system wide quality control consciousness, I feel we need 5.2....Tom, is there any possibility we can raise the 4.5 to 5.0 or 5.2?"* 42

The budget picture for ERIC became slightly brighter during the Summer of 1976. There were two anomalous situations developing which favored Hoover. First, this happened to be the time when the Federal government shifted its fiscal year to start October 1, instead of July 1. Thus, Fiscal Year 1977 would begin on October 1, 1976. The interim period (July 1 to October 1) was referred to as the "wedge" and all agencies received separate funding for those three months. Secondly, Clemens' Communications and Linkage Branch had planned to devote several hundred thousand dollars toward some program scheme for support grants to professional educational organizations to assist them in designing and conducting projects for disseminating information to their memberships. These plans did not work out. In this peculiar situation——because some of the Clearinghouses would be funded during the wedge period, ERIC fortuitously picked up some "fallout" money to enhance its "normal" budget cycle. As a result of the cancelled plans for professional organizations, Clemens asked Hoover to quickly establish a project which would allow the Clearinghouses to engage in some kind of projects which would benefit those organizations.

The funding picture this presented to ERIC was somewhat complicated, but the net result could be easily seen in tabular form. (See Figure 11.) It should be emphasized that the figures included in this chart were total *expenditures*, not merely *planned budgets*, for the entire ERIC expenditures——both for support of Clearinghouses as well as the so-called "service" contracts.

To determine how well, comparatively speaking, that ERIC benefited from these situations, one has only to add up fiscal years, 1976, 1977, plus the wedge. That total was $10,336,158——or an amount of over $5.1 million for each of the two years. Of course, a substantial portion of this——something between $250,000 and $300,000 was spent for the professional association project. Yet, in many ways, it was beneficial to the Clearinghouses.

FY	AMOUNT
1966	$1,999,320
1967	3,056,694
1968	2,896,281
1969	4,750,000
1970	4,626,128
1971	3,815,000
1972	3,994,000

FY	AMOUNT
1973	$4,157,276
1974	3,864,500
1975	4,074,000
1976	4,477,171
Wedge	1,209,363
1977	4,649,624
1978	5,050,406*

*Does not include costs for printing at the Government Printing Office. The planning figure for GPO costs was $90,000.

FIGURE 11: ERIC EXPENDITURES (FY 1966-1979)

This latter project was an interesting one—and "right down the alley" for the Clearinghouse directors. All of them already had contacts with professional associations; most, in fact, had established very close ties. The directors immediately contacted the associations, discussed possible projects, and wrote up descriptions of selected projects according to the format which Central ERIC had prepared.

Naturally, there was a variety of projects. For example, some allowed the associations to receive computer searches, along with a discussion or description of computer searching methodologies. Some projects arranged for various kinds of subject oriented workshops, with information on retrieval techniques. Some projects pertained to preparation and distribution of special information analysis products. Some projects looked forward to the formation of special working groups for problem-solving sessions. Some projects proposed to try out selected dissemination of information techniques. And so on.[43]

All of the professional association projects were established, officially requested, and contractually obligated in the space of two months, which allowed usage of money during the wedge period. With their variety, with the relatively limited amount of funds, and the expedited basis for establishment, some naturally turned out better than others. However, it was probably true that all of the projects served at least to cement closer relationships between the clearinghouses and professional associations. In some few cases, such as that at the Junior College Clearinghouse, the projects were subsequently contained and carried in the Clearinghouse budget category of information analysis products or special projects.

During the Fall of 1976, the results of a study appeared which, it was hoped, would have some application for ERIC, even though ERIC itself was not the subject of the study. Its title was *The Educational Information Market Study*, and it was a joint effort of the System Development Corporation, Applied Communication Research, Inc., and the Far West Laboratory. Paul D. Hood, Colin Mick, and Robert V. Katter were the principal researchers and authors of the study. The basic overall task was to determine user information requirements for various segments of the educational community. The report was scholarly, the investigators' methodology was excellent in concept and conduct, and the conclusions appeared to be valid from the collected evidence. Unfortunately, for any ERIC-related expectations, the evidence collected and the conclusions reached were less than exciting.[44] People in ERIC, for example, hoped the study would uncover evidence which could inferentially lead them to new directions, to new products, to new data bases, to new delivery systems, or modifications to those already existing. But that proved not to be the case. This was not an indictment or criticism of the concept of the study or the conduct of the study. Only the best intentions went into the study and it was conducted by some of the most capable people in the country. It was something which needed to be done, but which did not immediately formulate significant new directions. At least that was true for ERIC.

In a year of disparate, but significant activities, 1976 also was the year for important changes in the Clearinghouse structure. Three years earlier, the Ohio State University Center for Vocational and Technical Education was very disappointed to have lost the competition for the Clearinghouse on Career Education to Northern Illinois University. The three-year contract had run its course by 1976. This time Ohio State University was successful in the competition, the contract for which started on September 12. Appropriately enough, Ohio State won a bonus: a one-year contract with four options to renew—the first Clearinghouse award made on that extended basis.

The "five-year contract" situation occurred on a peculiarly casual basis. Some of the ERIC staff were visiting the NIE Contracts Office, talking about the ERIC Clearinghouse competitions, and bemoaning the fact that not many of them had attracted a significant number of bidders. In fact, several competitions had resulted in only one bid—that of the incumbent. Hoover nonchalantly said something like, *"Maybe if we made the pot sweeter, that is, offered a five year contract—we might get more bidders."* The Contracts Office people agreed. From then on, all RFP's carried a provision referring to a *"one-year contract, with four options to renew."*

Another competition during 1976 resulted in a shift of scene for another Clearinghouse. During the Fall, an RFP was issued for the Clearinghouse on Information Resources. This was a close competition which went in favor of Syracuse University, with incumbent Stanford University losing. As a result, Syracuse had the unique distinction of having been at two different times the site for two different Clearinghouses, the other being the Clearinghouse on Adult and Continuing Education, which had been combined into the Career Education activity.

These changes of Clearinghouse contracts are the last ones within the period covered by this narrative. The current list of Clearinghouses is included in the appendixes.

Central ERIC Operations, 1977

At the beginning of 1977, attention became riveted on plans for a grand conclave which became known as the Dissemination Forum, a national conference for all people interested in information dissemination. Since 1966, ERIC had frequent directors' meetings and technical meetings. Since 1972, ERIC had sponsored an annual ERIC Data Base Users Conference. The attendees being primarily those individuals involved with computer searching of the data base. Other NIE programs, the Research and Development Exchange, the Research and Development Utilization Group, and the State Education Agencies along with the National Dissemination Leadership Project, had been also meeting on a more or less annual basis. Then too, there was the large contingent from OE's National Diffusion Network, which had its own set of meetings. The Forum, sponsored by the Office of the Assistant Secretary for Education, NIE, and OE, was a major effort to amalgamate all these organizations into one conference setting. It was held at the Sheraton Hotel, Arlington, Virginia. Such a meeting of what might appear to be disparate groups, formed the following common set of conference goals:

"1. *To increase collaboration and coordination among NIE and OE contractors and grantees in the field of dissemination.*

2. *To increase common understanding of resources, linkage, and leadership with respect to quality control, financing, staffing (training), research, needs assessment, and evaluation.*

3. *To consider prospects for the future of educational dissemination activities in terms of political, financial, and organizational considerations.*

4. *To identify areas in which increased understanding is needed.*

5. *To develop a statement of principles affecting the development of educational dissemination."*

When Hoover dispatched planning information about the conference to the Clearinghouses, he stated: *"I urge all Clearinghouses to reserve the dates June 20 through June 24 for both directors and technical representatives. It is extremely important that ERIC be well represented."*[45] ERIC was well represented and both directors and some members of their staffs had ample opportunity to learn the status of some of the new (and at this point still fluctuating) programs and activities in dissemination, both at OE and NIE.

The ecumenical nature of the conference was apparent, too; in the directors' meeting they heard presentations on the Research and Development Exchange Program, State Capacity Building, State Information Dissemination

Activity, and the National Diffusion Network Program. The meeting, however, was also concerned with the on-going world of ERIC. Mollie MacAdams, who was on the R&D Staff of the Dissemination and Resources Group, was currently involved in two research projects which were investigating the value, problems, and feasibility of a legal file and a practice file as possible additions to the ERIC data base. She reported on progress to date.

Again, as at their previous meeting, the directors delved into various technical areas. They discussed the complications of the emerging possibility of a reprint service for CIJE articles. They talked about user services (which had been a subject of a recent poll among all of them). They deliberated the value and feasibility of multi-clearinghouse cooperative information analysis products, and chatted about that old chestnut "quality" in the ERIC data base. One subject which was of burning interest to everyone was copyright. Effective January 1, 1978, the new copyright law was scheduled to go into effect and would probably have a number of implications for processing documents into RIE. The legalities were frustrating as ERIC struggled to reach decisions on what new procedures to establish. Some guidance was forthcoming at this meeting when a representative from the Copyright Office discussed the background, terminology, and possible effects of the law, as well as attempted to answer questions bothering ERIC people.

One of the most interesting things relating to ERIC which emerged from the Forum, did not come from the directors' meeting or the technical meeting. It was a document that came from the entire group which attended the Forum. This document had originated shortly prior to the Forum, when a "group of professionals" met for one week during which they composed the *Statement of Agreement by Professionals in the Field of Educational Dissemination at the June 1977 Dissemination Forum.* This statement appeared at a general conference meeting. It was discussed, debated, and amended. In its final form, it was approved by an almost unanimous recorded vote of 191, yes; 4, no; and 4, not voting.

This statement came up with a definition of the very slippery word "dissemination." Most people were skeptical about *any* definition of that word because the more one knew about information and education, the more slippery the word became. Nevertheless, the group agreed upon the following definition:

> *"A number of efforts have been made to define the word dissemination. These efforts make it clear that several meanings are possible when the word is used. The Dissemination Analysis Group (DAG), a joint government task force, has delineated four possible usages:*
>
> *Usage 1: Spread:*
>
> *The one-way casting out of knowledge in all its forms: information, products, ideas and materials, 'as though sowing seeds.'*
>
> *Usage 2: Exchange:*
>
> *The two-way or multi-way flow of information, products, ideas and materials, as to needs, problems, and potential solutions.*
>
> *Usage 3: Choice:*
>
> *The facilitation of rational consideration and selection among those ideas, materials, outcomes of research and development, effective educational practices and other knowledge that can be used for the improvement of education.*
>
> *Usage 4: Implementation:*
>
> *The facilitation of adoption, adaption, and installation of improvements."*

Among the document's nine separate "agreements," was one—Agreement 4—which specifically related to ERIC:

> *"Agreement 4: An effective NATIONWIDE DISSEMINATION CONFIGURATION will require a broad, integrated resource base of knowledge. Information about educational research and development, practices, policy and legal matters should all be available through an ERIC-compatible index and a universally available set of access systems. These resources should be based on the current ERIC system, enlarged to encompass the resources of other educational information systems and clearinghouses, as well as the addition of new types of data files as appropriate. Quality control*

of resources should be maintained. Adequate information should be provided so that the users may judge and evaluate these resources for their own purposes." 46

Unquestionably, the above action was a strong endorsement of ERIC. Not only that, it placed ERIC management in a firm position to proceed with development of the legal and practice files*, which were already in the study phase. Now these studies would be less important in their justification stages; their principal value would lie in their presentation of possible alternatives as how to proceed in actually establishing and developing those files.

Of course, the development of new files could not take place immediately at the drop of a hat, or even at the drop of a recommendation from the dissemination forum. Although the study phase was on-going, the appropriate budget cycling had to be worked out. When Hoover started work on his FY 1978 budget, it was immediately doubtful the new files could be worked in. This year, Hoover's budget discussions were conducted with Ward S. Mason, who was the Acting Division Chief of the Information and Communication Systems Division. Mason's principal task had been Chief of the R&D System Support Division; however, Raizen selected him for the acting role to fill in the spot which had been vacated as a result of Clemens' death on March 20, 1977. Rosenfeld was already long out of the picture. He had left NIE in late 1975 and now only appeared on the premises in the role of a consultant.

Hoover's FY 1978 budget, which he tried to start pinning down in May 1977, proved to be a somewhat less intensive and uncertain exercise than it had been in previous years. In a memo to Mason, he stated: *"The best information I have indicates a FY 1978 budget mark for ERIC at $5,050,000. It is not clear whether that figure is supposed to include $300,000 for operation of a new file."* He had checked with MacAdams, project monitor for the new file development studies, and it appeared unlikely that any actual expenditures could be made during FY 1978. Hoover continued: *"Since we must develop a FY '78 budget for ERIC components, I need to settle on a mark for the whole system. I am strongly requesting that we use the $5,050,000 mark for FY '78 planning... This would be an increase over FY '77 (4.7 to 5.05) of $350,000. We would*

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*not ERIC funded.

distribute this increase by using about $150,000 for a major vocabulary improvement program and the other $200,000 for about a 4% offset of salary/overhead rate increases."[47] It looked promising that this mark of $5.05 million would be a valid one.

For many years the ERIC budget had been very tight, only loosening up somewhat with the fortuitous advent of the wedge period of July 1 - October 1, 1977. ERIC had lived on a more or less straight-line basis for about six years. A very large percentage of ERIC expenditures were for salaries. The ERIC budget was very labor-intensive, for there were over 200 people in the clearinghouses alone, with about 20 at the ERIC Facility. Admittedly, all of these individuals, particularly at the clearinghouses, were not on the payroll on a full-time basis; but many of them were. During these lean budget years the universities and professional associations——just like any other employer (including the Federal Government), were granting substantial annual pay increases. In addition, those host institutions for the ERIC contracts were often experiencing increases in their overhead rates. For those years, the American inflation spiral was everywhere evident, it seems to Hoover, except in the ERIC budget.

At this point the NIE budget was hopefully on a more firm foundation, the dissemination budget was being constructed with an understanding of the importance of ERIC to the entire dissemination picture, and Hoover's industry plus the overall effectiveness of ERIC as a solid program, were being recognized.

For a number of years, Hoover had what he referred to as a "Wish List" of items which he and the Central ERIC staff composed. This was an ever-changing list of items slanted toward improving ERIC. Although he carried this around in his hip pocket for several years, he never heard what he hoped he would hear someone say: *"Hoover, if you had an extra half a million dollars to spend for ERIC, how would you spend it?"* In the apparently improving climate of latter 1977, he decided to work on his list, update it, pare it down to a list of only 10 items, flesh it out with some substantiating narrative, and see if he could finally secure some additional funds for improvements that would make ERIC a more effective information system.

Hoover prepared a budget staff paper to test the atmosphere for his current "Wish List." As an added fillip to the request, he made reference to a recent draft of a paper Ronald G. Havelock was preparing on the general subject of evaluations which had been made of the ERIC system.* Hoover condensed several of Havelock's preliminary thoughts on ERIC.

> "1. *ERIC needs to continue to investigate and use developing, changing technologies;*
>
> 2. *A major need exists for the increasing of educators' awareness of ERIC products, services and potential uses;*
>
> 3. *ERIC should constantly monitor, evaluate, and improve quality control processes;*
>
> 4. *Users need some type of training in how the system operates and how it can be used;*
>
> 5. *Marketing efforts are presently at a minimum and need improvement;*
>
> 6. *Access for all educators should be a major goal;*
>
> 7. *A number of studies need to be developed ranging from the use of extant data to the development of additional knowledge and information."*

Then came Hoover's list of 10 items, each with a price tag on it. The following is a brief summary of the entire package:

1. Information Analysis Products List: $25,000

   Although the information analysis products were announced in clearinghouse newsletters, some journal columns, and other publications, they were not widely recognized. On several irregular occassions, ERIC had published two or three-year cumulations of the products, but such a long delay considerably detracted from the timeliness and general impact of each individual product. The plan, therefore, was to announce the products in a quickly published, freely distributed, periodically appearing bibliography which contained a quick, rough, but usable index. About 10,000 copies. These would reach people other than those already in the mainstream of professionalism, such as information brokers, standing order customers, members of of the state education agencies, local education agencies, and the growing numbers of educational agents of one kind or another involved at the local level.

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*Havelock was widely known for his work as a social science researcher; also, he had done considerable thinking and writing on the subject of dissemination. He joined the NIE staff in 1976 as a research fellow.

2. On-Line Usage Information: $1,320

This was a minor item designed to obtain statistical data and any other usage information from Lockheed and from System Development Corporation. Hoover was intensely interested in this data because he had reason to believe the ERIC tapes were being used heavily, and it was very difficult for ERIC to obtain valid usage data for any ERIC operations. Therefore, he planned to supply the two companies free copies of the ERIC tapes as a *quid pro quo* for their computer usage statistics.*

3. Clearinghouse Newsletters: $96,000

Since the beginning of the ERIC system, in 1976, the Clearinghouses published information bulletins as a natural vehicle for distributing news about ERIC, their Clearinghouse activities, and subject-oriented information. But several years previously, ERIC management had decided that lacking specific HEW approval, and possibly being in conflict with GPO printing requirements, the newsletters had to be limited to one per year. Recently, however, Central ERIC learned that contractor newsletters were permissible, if they conformed to two restrictions:

- they should contain no information designed to support or defeat pending Congressional legislation, and
- they should contain a disclaimer notice that they were not an official NIE publication.

Therefore, Hoover wanted to allow the Clearinghouses to resume publication of information bulletins on a quarterly instead of annual basis. It was estimated that each newsletter cost about $2,000.

4. Free-Text Searching for the ERIC System: $30,000

Within the previous two years, the major on-line computer systems, which provided searches of the data base, introduced a free-text searching capability. The searcher could now use all elements of the data entry, including the title and abstract. This technique permitted a powerful search capacity, particularly in highly specific searches. Hoover wanted to fund a study of free-text searching and compare it with searching techniques confined to only descriptors and identifiers. A second major objective of the study would be to determine what indexing and abstracting changes might be made to increase the effectiveness of free-text searches.

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*This project was not actually accomplished.

5. ERIC Welcome Wagon: $9,000

This referred to a Smardak idea for a customer relations gimmick with which to welcome each of the ever-increasing number of organizations which subscribed to a standing order for all microfiche of the ERIC document collection. The idea was to have a clearinghouse representative visit the new standing order customer, give a day's worth of indoctrination on ERIC and search techniques, and offer a supply of current ERIC tools—that is, various ERIC working documents.

6. Using Word Processing in the ERIC System: $43,000

At this time the input for RIE was handled in the following manner: the Clearinghouse typed a single-page resume on a special typewriter which permitted it to be processed on an OCR (Optical Character Recognition) machine, thence on to a magnetic tape format. The resumes were then printed by the computer, editing occurred, and any corrected line had to be retyped with the text subsequently corrected on the magnetic tape. It was necessary to maintain high quality standards on the input so that the OCR reader did not introduce errors. The word processing machine could be used at the Clearinghouses to permit initial entry, editing, and storage. Corrections could be made as needed. When proofed and corrected, the copy could be transmitted over the telephone lines to the ERIC Facility which could make any further single word or letter corrections without retyping the entire line. This technique promised considerable savings; however, the $43,000 would be used to determine practicality of the technique, the overall cost, and the real advantages.

7. Direct Terminal to Computer Input: $50,000

The existing OCR input method required special typewriters, special forms, rigorous typing procedures, careful handling and packaging of forms, and the use of an ERIC Facility subcontractor for the OCR activity. This required considerable input form handling: from the Clearinghouse to the Facility—to the subcontractor, back to the Facility. With the availability of nationwide on-line networks, low cost minicomputers, it was logical that ERIC should investigate the possibility of direct Clearinghouse terminal to ERIC Facility computer input procedures.

8. Use of Technology for Input and Output: $20,000

The development of the on-line computer technology, in which ERIC had taken a lead, appeared to be the most logical and economical method for establishing the computer search capability. However, in recent years there were significant and consistent decreases in the cost of computers and associated memory devices. Computer technology watchers were projecting that costs during the succeeding decade would amount to approximately 17 percent per year. Computer companies were producing mini and micro computers for one-hundredth the cost of computers a decade ago with the same operational capability. This whole concept required detailed study to determine the operational and economic realities existing at the present and for the immediate future.

9. Microfiche Products: $15,000

   The ERIC system produced a number of products as printed documents, which were expensive because of their large size and low sales volume. Because the basic input information was stored on magnetic tape, it was now possible to produce microfiche masters of high legibility by a process called "COM"——Computer Output Microfiche. With ERIC providing the developmental costs, for example, an annual collection of RIE resumes and indexes which cost about $85 in the printed version, would amount to only about $7 in microfiche. Thus, more libraries and other users could afford to purchase this and similar ERIC "spin-off" products.

10. Abstracts for CIJE: $200,000

    Since its inception, CIJE journal entries had been annotated instead of abstracts. A subcommittee of the American Education Research Association's Publications Committee had recommended that ERIC provide abstracts for CIJE so as to make the publication a more desirable research tool. Although Hoover's justification did not mention the fact, the $200,000——or thereabouts——would be an annual increase in the ERIC budget on a permanent basis.

The approval channel for this package turned out to be more formal than Hoover had followed previously: it went *through* Raizen *to* Michael Timpane, NIE's new Deputy Director. Timpane had arrived on the scene about the same time as NIE's new director, Patricia A. Graham, who was sworn in on September 9, 1977. As it turned out, the CIJE abstracting idea was disapproved and the improvements package was reduced by one-third. Therefore, Hoover included a $200,000 figure for system improvements in the FY 1979 budget plan.[48]

Central ERIC Operations, 1978

Soon after Hoover began the above budget exercise, the directors held a meeting at the Gramercy Inn, only a few blocks from NIE in downtown Washington, on February 2-3, 1978. This meeting exhibited further evidence of ERIC's involvement and the directors' accentuated interest in the broader dissemination scheme, particuarly as expressed through their system of committees and subcommittees. For example, Flaxman, of the Urban Education Clearinghouse, reviewed his contacts with NIE's new RDX (Research and Development Exchange) program. Basically, this was an NIE initiative to learn about practitioner-level needs in education, transmit those needs to organizations involved in research and development, and maintain a liaison between practitioner, researcher, and developer. The state agency dissemination people were also involved in this loop of activities. Flaxman's contacts, as a representative of ERIC, revealed that ERIC could provide several types of services:

1. train various groups how to use ERIC;
2. establish contacts with individuals for specific delineation of needs and services;
3. provide various materials about the ERIC system;
4. furnish ERIC search strategies and information on the *ERIC Thesaurus*; and
5. send copies of documents to assist in the overall dissemination functions.

In turn, the people involved with the RDX program could:

1. provide feedback trends in various educational fields;
2. suggest possible new ERIC products;
3. serve as acquisition links for supplying documents to the ERIC data base; and
4. collect and furnish information relating to ERIC user relations.

Another directors' committee report—on liaison with the states—came from Peter Eddy, Languages and Linguistics Clearinghouse. His contacts with people from the dissemination program in the states had indicated several possible courses of action the directors could take:

1. notify the states about ERIC's information analysis products;
2. strengthen document acquisition arrangements with the states;
3. establish better lines of communication between Clearinghouses and certain state officials, and
4. conduct a dialog with state dissemination people about possible referral of questions to the Clearinghouses.

Still another involvement with the overall dissemination activities was establishment of the so-called "technical assistance team." The directors learned that a pot of money had been established at the ERIC Facility to assist states in developing ERIC compatibility for their computer-based, document control files. ERIC managers considered it important that such files would be compatible with the ERIC file. This was particularly important in those cases where the states were going to use the *ERIC Thesaurus* in assigning retrieval terms and when the state wanted to conduct simultaneous searches of their local files and the ERIC files with identical search strategies. To accomplish this, it was necessary to become familiar, in detail, with the technical aspects of the ERIC computer tape and how it was constructed. Upon application from the states, along with appropriate details of their plans, ERIC would dispatch a team of experts to the states to lend them assistance in making their files ERIC compatible.

In addition to the above discussions of dissemination activities, the directors also talked about other matters more directly involved with ERIC operations. One of these again uncovered their interest in technical matters. They were, in fact, involved with technical matters and had to make decisions relating to them. They felt somewhat shut off and detached from the many operational matters which were discussed and acted upon at the systems technical meetings. Perhaps, they stated, the directors' meeting and the technical meeting could be held back-to-back, or concurrently, or in some way so as to involve them and allow them to participate in decisions of technical matters as soon as they were made. Although no suggested change met with overall approval, it appeared obvious to Hoover that something would have to be worked out in the future.

One other technical operations activity of considerable interest was the Vocabulary Improvement Program. Central ERIC had initiated the planning phase of this activity during the Summer and Fall of the preceding year. After a series of meetings, held in conjunction with the regional technical meetings, plans emerged which called for significant involvement of Clearinghouse personnel. A month or two following the meeting, the directors learned, they would receive a large stack of forms which called for a review, some lexicographic research, and decisions on their individual assigned block of words from the *ERIC Thesaurus*. The directors were encouraged to follow up on this activity and try to live within established schedules. Their cooperation was important to this project which required complete systemwide participation and rather tight scheduling.

Seldom did the directors take an official vote at any directors' meeting. It was seldom their intention to do so, and there were no established rules of order to cover this procedure. Nevertheless, they did at this meeting. For several years there had been a long-standing debate about how to handle Level III documents (those documents announced in RIE, but for which neither hard copy or microfiche copies were available).* After some debate on the subject, a motion was made and passed that Level III documents no longer appear in the main section of RIE, but moved to a section in the back of the volume and be identified with a prefix other than "ED". Hopefully, this would satisfy those who wanted to continue to announce valuable Level III documents, and also satisfy those who thought their unavailability on microfiche or hard copy discouraged some searchers.

Another discussion point was Howe's input on information he had collected about the possibility of a new Department of Education. There were many rumors flying around (he repeated some of them), but he apprised the directors of the facts as they were known at the time.

Still another item at the national level of interest was the upcoming White House Conference on Libraries and Information Science, scheduled for October 1979. Prior to that event, each state was scheduling a state conference. Because the existing Administration was looking to these conferences as a vehicle for major policy development for libraries, Ely, of the Information Resources Clearinghouse, recommended that the directors arrange to make inputs about ERIC at their state level. [49]

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*For a full discussion of Level III documents, see Chapter VIII.

This was an excellent directors' meeting. Hoover, in fact, said, *"I feel the recent meeting was probably the best meeting we've had over the years."* [50]

With the $5,050,000 FY 1978 budget continuing to hold up during the Spring of 1978, it began to look more and more certain that ERIC would experience its first $5 million year. Then, also, Eunice Turk, who was Raizen's administrative officer, asked him to prepare a four-year budget planning estimate. Such projections, while always will-o-the-wisp in nature, were, however, always based on logic and reasonable expectation. The grand totals were:

FY 1979 —— $5,600,000
FY 1980 —— $6,200,000
FY 1981 —— $6,685,000
FY 1982 —— $7,080,000

These were broken down into approximations for each major system expenditure. The following data (see Figure 12) represented early planning figures for each system component for FY 1979. None of them was firm; each was only an approximation, and considerable variation occurred when it come to actual negotiation.

This was the type of a planning budget which ERIC traditionally had to construct. Even if the bottom line figure remained intact, which it frequently did not, each of the figures represented an amount which could not be exceeded, *unless* some other amount was lowered. For each year's operation, all of the above-listed organizations had to submit proposals containing a narrative explanation of the work they intended to do, along with a budget for each category of effort. The differences, in some instances significant, in the amounts for each Clearinghouse, resulted from a wide range of factors. Some of those factors were:

1. Subject scope;
2. Size of educational constituency;
3. Volume of input into RIE and CIJE;

ACTIVITY	FY79 BUDGET PLAN
1. Career Education	$ 330,000
2. Counseling and Personnel Services	$ 248,000
3. Early Childhood Education	$ 228,000
4. Educational Management	$ 242,000
5. Handicapped and Gifted Children	$ 269,000
6. Higher Education	$ 331,000
7. Information Resources	$ 282,000
8. Junior Colleges	$ 197,000
9. Languages and Linguistics	$ 241,000
10. Reading and Communication Skills	$ 341,000
11. Rural Education and Small Schools	$ 288,000
12. Science, Mathematics, and Environmental Education	$ 298,000
13. Social Studies/Social Science Education	$ 249,000
14. Teacher Education	$ 292,000
15. Tests, Measurement, and Evaluation	$ 236,000
SUBTOTAL:	$4,351,000
1. CIJE Contractor	$ 75,000
2. Dissemination Conference	$ 15,000
3. ERIC Document Reproduction Service	$ 100,000
4. ERIC Facility	$ 954,000
5. Exhibit	$ 5,000
6. GPO Printing	$ 100,000
SUBTOTAL:	$1,249,000
GRAND TOTAL:	$5,600,000

FIGURE 12: ERIC BUDGET FY 1979

4. Overhead rates and salary differentials;
5. Characteristics of information analysis program;
6. Special projects (either scope in nature or ERIC-system)
7. The applicability of Clearinghouse scope to NIE priorities.

The size of the ERIC Facility contract rose at a modest rate (except during the years of the ERIC straight-line budgets, more or less along with the cost of living and increases of general workload. On occasion, such normal increases were enlarged when Central ERIC negotiated with the Facility for special ERIC system improvement projects. The EDRS contract remained stable because ERIC money was supplied largely to pay for standing orders of microfiche collections for the Clearinghouses and a few other organizations. The printing line item was set aside for a transfer of funds to the Government Printing Office for printing and distributing RIE, and occasionally other items, such as the ERIC brochure. The CIJE costs remained relatively stable and covered the costs of the contractor performing some of the indexing and abstracting of journal articles. ERIC's contribution to the dissemination conference, as well as expenses for the ERIC exhibit rounded off the total ERIC budget for FY 1979. [51] Budget problems for FY 1978 proved minimal; the bottom line of actual expenditures was at the planned level of $5,050,000.* [52]

Budget problems did exist, however, for the Dissemination Forum, which originally intended to meet in June 1978. The cooperative funding pattern was delayed and the Forum was postponed to August, usually not a good month for such an event (particularly not a good month for a meeting in Washington, which has a well-known reputation for its humid and uncomfortably hot weather) nevertheless, attendance was probably in excess of 800 people. Again the ERIC Users Conference and directors' meeting were held during the same week. August 14-18, at the same location, the Sheraton Hotel, in Arlington, Virginia.

The directors' meeting was a short, one-day affair, an extracurricular gathering, called together amidst the overall bustle of the Forum. In this atmosphere of convenience, the meeting was largely confined to bringing people up-to-date on operational matters having occurred since the directors had met in February. In effect, it was something akin to a staff meeting in which the presiding official calls on people in circular order and asks them to report on what is new since the last staff meeting.

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*Total expenditures for FY 1978 were $5,050,406; however, this figure did not include costs for printing RIE at the GPO plant. ERIC had set aside $90,000 for this activity. GPO billing usually was delayed beyond the end of the fiscal year.

The only significant change from this procedure occurred when the directors engaged in a debate as to the value of foreign documents and how many and what kind should be acquired for entry into RIE. It was clear that not much could be settled in talking off the cuff on this issue; therefore, one of the directors, Ely, volunteered to make a study of the matter, poll the Clearinghouses, and come up with a report and some recommendations. One other matter of new business: Morrissett was elected the new chairman of the directors' Council. Overall, it was somewhat of an informal meeting because attendees were frequently leaving the meeting to attend some other Forum affair or to make a presentation in another part of the hotel.[53]

One of the basic ideas of the Dissemination Forum was to provide a common meeting ground for people with similar interests, but a slightly different area of operation. This noble purpose actually came to fruition in the case of ERIC people and those from OE's National Diffusion Network (NDN). Under the chairmanship of Irving Morrissett, of the Social Studies/Social Science Clearinghouse, a Linkage Committee composed of several ERIC members and several of those associated with NDN, held several meetings during 1978. ERIC members learned that the NDN was a network of about 225 locally-developed projects and programs, which fostered the adoption and adaption of exemplary programs in other school districts. Begun in 1974, the NDN was a program of OE's Division of Educational Replication, which was funded at a level of about $7 million annually. This cooperative enterprise, from ERIC's point of view, would help to pinpoint locations of NDN documents for the ERIC acquisition specialists.[54]

Meanwhile, for a large part of 1978, NIE was undergoing a long, drawn-out reorganization. On November 18, Graham appointed forty-six NIE employees to a Reorganization Planning Task Force.[55] The following months were uncertain ones for many NIE staff members who continuously faced the possibilities of personnel reassignments, desk audits, hiring freezes, and downgrading actions. It was a time of great uncertainty: the offices, the halls, were filled with rumors. The actual resultant negative actions, however, were few. Finally, during the Fall of 1978 things became ironed out, with most of the staff being affected in one way or another by the resulting "team management concept" of the reorganization. Raizen's Dissemination and Resources Group was redesignated the Program on Dissemination and Improvement of Practice. Raizen was replaced by John A. Minor, previously the Associate Superintendent of Schools in Atlanta, Georgia. On July 17, Hoover became the Assistant Director for Information Resources, which included overall responsibility for ERIC, the NIE Library, the NIE Educational Reference Center, and the Satellite Programs. Shortly thereafter, Robert Chesley, formerly the project monitor for EDRS and the ERIC Facility, replaced Hoover as head of ERIC. His official designation, in line with the team concept, was Team Leader of ERIC. Minor's dissemination activities, the organization placement of ERIC, and the corresponding assignment of people, are shown in Figures 13 and 14 on the following pages.* It could be said there were additional people involved with ERIC, it was also true that those people's duties were spread elsewhere in the disseminating group. According to the team concept each had duties other than those relating directly to ERIC.

Although many of the organizational and personnel changes became operational during the late Summer and Fall of 1978, the formal, approved organization charts did not appear until February 26, 1979.

Central ERIC Operations, 1979

The year 1979 had an inauspicious beginning. The previous Fall there was a competition for the CIJE contract. Macmillan Information, which had

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*See Appendix for overall NIE organization.

December 1978

DISSEMINATION AND IMPROVEMENT OF PRACTICE GROUP

Immediate Office of the Associate Director

Associate Director: John A. Minor
Head Secretary: Sandra Thomas

Division of Information Resources

Charles Hoover: Assistant Director
Diane Lewis: Secretary
Alan Moorehead: Program Manager
Michael Jackson: Clerk (Typing)

National Library of Education

Charles Missar: Supervisory Technical Librarian (Ed.)
Judith Black: Librarian (Ed.)
Joanne Cassell: Librarian (Ed.)
Barbara Smith: Library Technician
Frank Bryars: Technical Information Specialist (Ed.)
William Higgins: Technical Information Specialist (Ed.)
Judith Stark: Technical Information Specialist (Ed.)
Mary Campbell: Technical Information Specialist (Ed.)
Joan Trumble: Clerk-Typist
Karen McMillan: Student Aide
Library Technician: Vacant

ERIC and Public Communication

Lawrence Grayson: Ed. Research Spec.
Frank Smardak: Ed. Research Spec.
Robert Chesley: Ed. Research Spec.
Catherine Welsh: Ed. Research Spec.
Doris Edmonson: Ed. Research Spec.
Kevin Arundel: Ed. Research Spec.
Albert Feiner: Senior Associate
Jim Prevel: Ed. Research Spec.
Patricia Coulter: Ed. Research Spec.
Richard Otte: Ed. Research Spec.
Mildred Thorne: Ed. Research Spec.
Denise Owens: Clerk (Typing)
Ed. Research Spec.: Vacant

FIGURE 13: DISSEMINATION AND IMPROVEMENT OF PRACTICE GROUP——PERSONNEL AND TITLES

PROGRAM ON DISSEMINATION AND IMPROVEMENT OF PRACTICE (ENS)

APPROVED: Patricia Albjerg Graham
DATE: February 26, 1979

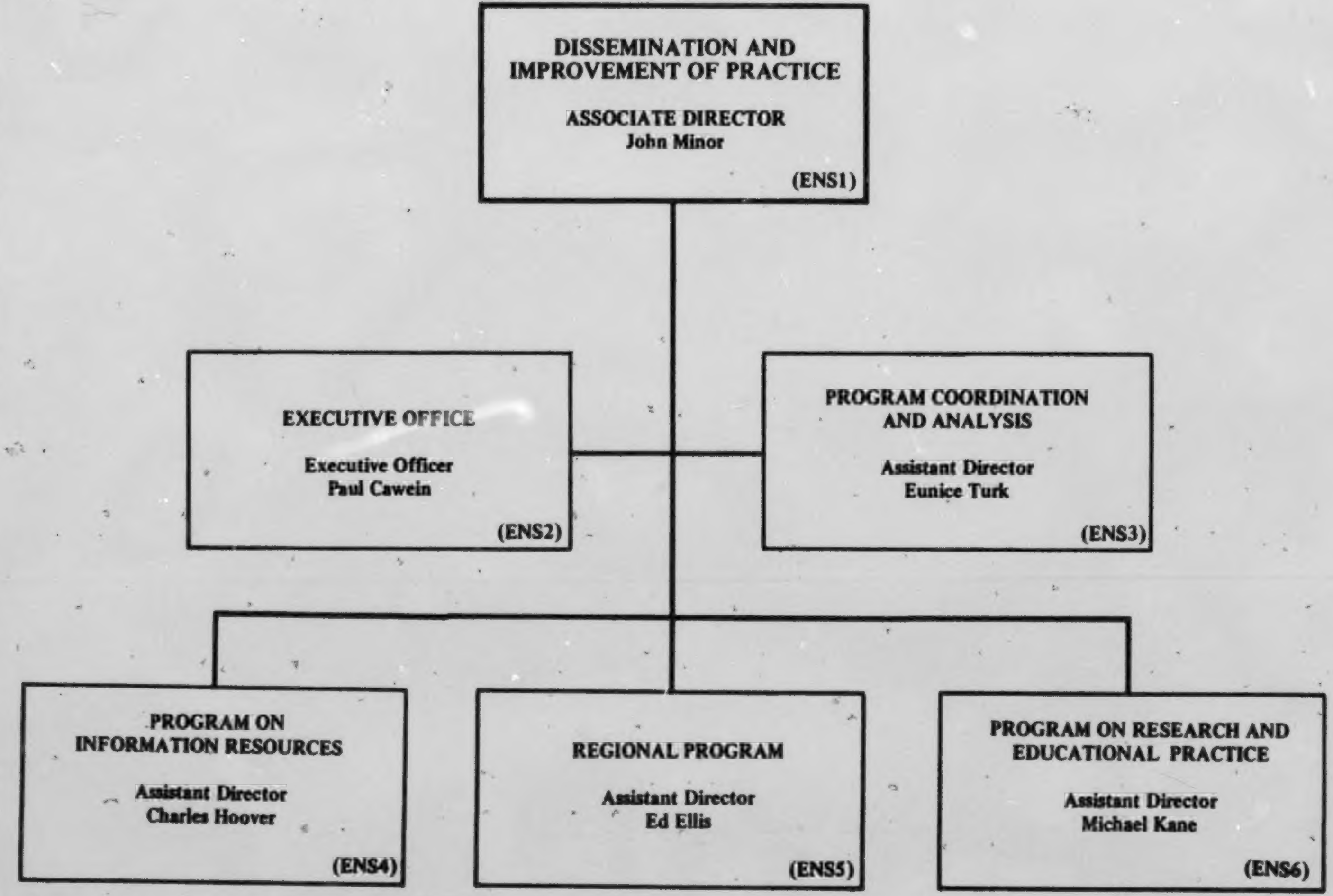
DISSEMINATION AND IMPROVEMENT OF PRACTICE
ASSOCIATE DIRECTOR
John Minor
(ENS1)
EXECUTIVE OFFICE
Executive Officer
Paul Cawein
(ENS2)
PROGRAM COORDINATION AND ANALYSIS
Assistant Director
Eunice Turk
(ENS3)
PROGRAM ON INFORMATION RESOURCES
Assistant Director
Charles Hoover
(ENS4)
REGIONAL PROGRAM
Assistant Director
Ed Ellis
(ENS5)
PROGRAM ON RESEARCH AND EDUCATIONAL PRACTICE
Assistant Director
Michael Kane
(ENS6)

FIGURE 14: PROGRAM ON DISSEMINATION AND IMPROVEMENT OF PRACTICE——ORGANIZATION CHART

held the contract for ten years, lost that competition to Oryx Press, Phoenix, Arizona. Contract start date was January 1, 1979. Shortly after the turn of the year, however, Macmillan circulated a flyer to its CIJE subscribers which announced that despite their loss of the contract with NIE, the company intended to publish an *Index to Educational Journals.*[56] This turn of events created a number of uncertainties for the future of the journal publication. Catherine Welsh, the CIJE project monitor, and Chesley became deeply involved in disucssions with the NIE contracts office and the NIE lawyer, Richard Werksman, in trying to reach some kind of a satisfactory solution to the publication dilemma.

As for the good news, Chesley had already reported earlier to the directors that *"the NIE budget for FY '79 has remained essentially intact, despite NIE's lower-than-expected figure from Congress. I had expressed individually to several of you the anticipation that most of the cuts would come from new, rather than continuing programs. This is the course that was followed."*[57]

Encouraged with those propitious prospects for the remainder of FY 1979, he tried to get a jump on FY 1980. So, early in December 1978, he wrote to the directors and urged them to furnish him with some supporting data:

> *"The Institute is preparing to plan its FY 1980 budget. This process has, in the past, been one which has allowed too little time to acquire adequate input from the clearinghouses themselves. I would like to anticipate that we will probably again have short deadlines and ask now for your thoughts and ideas. The word is that budgets for FY 1980 will be tight, not just in NIE, but all over the Government. Therefore, the stronger we can make our plan, the more likely we will be able to obtain the resources we need to move ahead."*

Chesley had something specific in mind. He had just received the list of new NIE priorities; with these he constructed a sort of questionnaire and asked the Clearinghouses to indicate their scope of interest relating to 15 specific areas as well as in what operational manner they could respond. Their answers, in tabulated form, are indicated in Figure 15. Their responses also covered several principal categories of effort.

1. Acquisition efforts could be concentrated in the priority areas. Thus on a few months' turnaround time, the ERIC data base would begin to reflect additional documents relating to those subject priorities.
2. Information analysis products could be targeted to the priority list.
3. Each Clearinghouse advisory board member could be alerted to contribute to group recommendations on how best to apply the priority areas to the professional associations, school systems, or governing agencies in their special educational setting.
4. The Clearinghouses could use all their awareness vehicles (newsletters, brochures, workshops, journal columns, and so on) to advertise, announce, or otherwise broadcast information about the priorities.
5. Provision of increased access to priority information through bibliography preparation or any other special arrangements with professional organizations and other dissemination activities for the spread of related information.[58]

This accent on planning was somewhat endemic to the ERIC environment of 1979, for it was also characteristic of the directors' meeting, held on March 1-2, at the Ramada Inn, Alexandria, Virginia. These were two very solid days of meetings, with a long, complicated agenda and over 25 people listed as speakers, presenters, or discussion leaders. No less impressive were the "handouts" (numerous background papers, reports, project status statements, and planning documents: the total package was almost two inches thick.

There was a long procession of status reports on such activities as the new CIJE contractor, the steering committee, the ERIC budget, the Vocabulary Improvement Program, the Standing Order Customer workshops, the various new file development projects, and other less important operational activities. In addition, speakers related current activities of all the many NIE dissemination programs, the OE NDN activity, the National Audiovisual Center, as well as brief accounts of about 10

CLEARINGHOUSE	PRIORITIES														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Career Education	X				X			X		X	X	X			X
Counseling & Personnel Services												X		X	X
Early Childhood Education	X	X	X					X		X	X			X	
Educational Management					X	X	X		X			X		X	X
Handicapped and Gifted Children														X	X
Higher Education	X				X					X				X	
Information Resources											X	X		X	X
Junior Colleges	X	X					X	X		X		X			X
Languages and Linguistics	X	X	X							X				X	
Reading and Communication Skills	X	X	X							X				X	
Rural Education and Small Schools		X			X			X					X	X	X
Science, Mathematics, and Environmental Ed.	X	X	X	X			X		X	X				X	X
Soc. Studies/Soc. Science Ed.	X								X				X	X	
Teacher Education	X	X								X	X				
Tests, Measurement, and Evaluation		X													X
Urban Education	X	X		X	X	X			X					X	X

PRIORITIES

1. Teaching
2. Student Achievement and Testing
3. Literacy
4. Urban Education
5. Youth Policy and Secondary Education
6. Desegregation Studies
7. School Finance Reform
8. Rural Education
9. Legal and Government Studies
10. Postsecondary Education
11. TV and American Education
12. Research on Women's Education
13. Regional Programs
14. Improvement of Practice
15. Equity and Educational Opportunity

FIGURE 15: ERIC CLEARINGHOUSE RESPONSE TO NIE PRIORITIES——FY 1980

other non-ERIC information Clearinghouse activities of some indirect interest to ERIC members, such as: women's equity, nutrition, child abuse, ethnic studies, and the like. On the whole, a diversified conglomeration of subjects, but a very complete agenda of items, most of which were of immediate and direct interest to the directors.[59]

One item in the package of handouts was a very rough draft of an important document which Hoover and his staff were working on: *Information Resources Planning Document, FY 1980-81.* This was given to the directors as a coordination courtesy, as well as a plea for any critical comments or additions. Hoover made some last-minute changes and only a few days later, on March 9, submitted the document to the Associate Director (Minor).[60]

Because it appeared likely that ERIC would continue to be an organizational part of NIE's overall dissemination function, and because ERIC activities would fit in closely with the overall design of those activities, it appeared appropriate for all people associated with ERIC to be aware of the planning philosophy of Hoover's organization, the Program on Information Resources. For, in turn, Hoover's planning had to conform with the overall aspirations of Minor's organizational entity, the group for Dissemination and Improvement of Practice. Therefore, although they were extensive, as well as general in nature, it was important to read and understand the "strategies" which Hoover developed. The strategies, as well as many of the details, were not developed merely as a staff exercise, but along with the advice of outside experts having a variety of backgrounds. The group which assisted Hoover is displayed as Figure 16 on the following page.

A brief prologue to the strategies emphasized that primary attention must be given to designing systems, services, and products which would meet the needs of "gatekeepers" as:

- ERIC standing order customers;
- state education agencies;
- intermediate service agencies;
- special information services;
- professional organizations;
- special librarians; and
- dissemination program information service personnel.

NAME/TITLE	ORGANIZATION	LOCATION
Frank Mattas, Director	San Mateo Educational Resources Center	San Mateo, California
Dave Manis	Central Midwestern Regional Educational Laboratory	St. Louis, Missouri
Alice Fite, Executive Secretary	American Association of School Librarians	Chicago, Illinois
Carnot Nelson	University of South Florida	Tampa, Florida
Mark Nagy, Superintendent	William Penn School District	Landsdown, Pennsylvania
Karen Dowling, Head of Media Services	Montgomery County Public Schools	Rockville, Maryland
Nofflet Williams	Resource Coordinating Center University of Kentucky	Lexington, Kentucky

FIGURE 16: PROGRAM ON INFORMATION RESOURCES - ADVISORY GROUP

Someone suggested to Hoover that these persons should be called "gate-openers," instead of "gate keepers."

INFORMATION RESOURCES
SELECTED STRATEGIES

"1. *Facilitate change from a passive to an active mode for all programs by increasing and promoting awareness of and access to Information Resources Division services and products.*

2. *Develop and facilitate communications with and through educational organizations and school-related agencies to foster interorganizational collaboration and planning. Strive for a variety of flexible arrangements.*

3. *Identify the key linkers and 'gatekeepers' presently involved in the existing wide variety of dissemination activities with the aim of developing cooperative and facilitative working arrangements.*

4. *Promote, support, and strengthen existing awareness and access activities, including federal, state, local, and private systems.*

5. *Seek out and develop collaborative, cooperative activities with those organizations and groups specifically in addressing the needs of the 'information poor.'*

6. *Increase the development of activities aimed at increased use of media and public communications in addressing awareness and access issues.*

7. *Facilitate direct communications between users with similar concerns and problems.*

8. *Continue to address the problem of a mismatch of products and services with the kinds of information products most educational users want.*

9. *Develop and facilitate needs sensing activities and integrate them into information resource delivery systems.*

10. *Reduce time lag between expressed need for information and receipt of information."*

Then Hoover and his committee did something even more admirable; they also listed *rejected* strategies:

"1. *Develop a major activities/programs to identify nationally all available information resources which cover the field of information.*

2. *An attempt to develop activities which would provide direct links to the wide universe of educational practitioners.*

3. *Establishment of an extensive linking agent or educational extension network.*

4. *Development of activities which would assume the role of existing linking agents of networks."*

The principal reasons for rejecting these strategies were twofold:

- they would cost too much money; and
- they would involve too much federal intervention or control in local, state, intermediate, or regional areas.

Also, other dissemination activities were already heavily involved in those activities.

Then, in consonance with Hoover's list, Chesley composed a list of strategies which related directly to ERIC. It was long, but because this list will be projected beyond publication of this narrative, it is included in its entirety. It is composed of items other than those considered as "traditional," that is, beyond what ERIC was currently doing:

1. Focus a national effort on such linkers as school media specialists (school district-wide and individual school building levels); intermediate service agencies; teacher centers; and schools of education.
2. Collaborate with selected professional organizations and other groups in a regional seminar focusing on information awareness and access (e.g., school boards association, association of school administrators, elementary and secondary principals).
3. Explore possibility of using existing communication channels within professional associations and other user groups (e.g., special inserts to accompany organizationsl mailings).
4. Develop feedback loops to insure that products and services are responsive to user needs.
5. Maintain a file of users with similar educational problems to facilitate communication between groups which may share information.
6. Develop a plan for serving practitioners (teachers, principals, school board members, paraprofessionals, volunteers, etc.) in unserved non-metropolitan areas by utilizing existing telecommunications networks.
7. Identify needs to target user groups.
8. Explore ways to reduce the financial cost to consumers for accessing information bases.
9. Encourage, design, develop and/or conduct regional, state and local conferences to consider and initiate inter-organizational arrangements or networks. Involve participants in the planning and on-going guidance of the activities.
10. Acquire input from school media specialists on reference tools and where these don't exist, develop tools to aid in the use of existing information.
11. Provide information access for individuals who are hard to reach, e.g., citizens groups, the information poor.
12. Develop and/or disseminate knowledge synthesis for various types of users. Develop affordable "State-of-the-Art" reports on current concerns.

13. Professionally produce a movie, slide/tape, and other promotional and training publications and multi-media kits on ERIC.

14. Design a mini-grants program for unique awareness activities to direct contact groups, i.e., higher education, regional labs and others. Include training programs for: searchers, negotiators (search clarification), field agents.

15. Expand the technical assistance team activities begun during FY 78-80 to other user groups besides SEA's.

16. Design and implement a Selective Dissemination of Information (SDI) Service for ERIC citations specific to interest groups.

17. Develop a national "hot line" (free "800" telephone number) for information on education. Telephones will be staffed with information specialists, so an immediate answer may be given when possible, rather than merely a referral to another source.

18. Implement an active marketing effort through existing contractors to increase subscriptions to existing products and services.

19. Develop special resources of:

    - materials used to explain test results to parents, and
    - materials to explain testing process and test results to students.

20. Plan, develop, conduct, and evaluate awareness workshops for education personnel using telecommunications networks in underserved non-metropolitan areas (use gatekeepers or resource persons at each local site).

21. Develop detailed "how to" plans that can be used by practitioners and gatekeepers in underserved non-metropolitan areas to access IR programs.

Attached to these plans were budget estimates carrying through to Fiscal Year 1983. They were not significantly different from Hoover's previous figures. The practice file appeared separately because of the undertainty of the pilot test which would occur beforehand:

PROGRAM	FISCAL YEAR			
	1980	1981	1982	1983
ERIC	$4,800,000	$6,200,000	$6,500,000	$7,500,000
Practice File	375,000	450,000	525,000	600,000
	$5,175,000	$6,650,000	$7,025,000	$8,100,000 61

One could be cynical, at least doubtful, about the achievability of such plans. So many things could happen: a new NIE administration could mandate a new set of priorities; Congress could declare legislative requirements for new directions; the world of education could change in many different ways; and certainly budget restrictions could have an immediate repressive effect.

Nevertheless, it was clear that ERIC was planning a course to lift itself from the passive data base attitude it had assumed for many years. If all (or even some) of the plans materialized, ERIC would change its stance from that of a wholesaler and stick its foot in the door as a retailer of educational information.

CHAPTER VII. THE VOCABULARY

How can one adequately convey the importance of the vocabulary, the thesaurus, the word list for an information system? It's the *sine qua non*, it's the key, it's the guts. The construction, maintenance, and improvement of the thesaurus are all mind boggling, back breaking, seat aching work. Only those who have done it know how tough it is. Only those can do it who have a peculiar combination of human traits: a vigorous and logical mind, the ability to make frequent and important decisions, the faculty to completely ingore the clock on the wall, a penchant for intense concentration, the capacity to be able to laugh at oneself, and a willingness to admit mistakes. Working with a thesaurus is an impossible task if one can only accept perfection. The best to be hoped for is a good, workable word list which contains a minimum number of errors and which is then placed under the attentive care of a dedicated lexicographer who adds to it, subtracts from it, and changes it. Maybe even finds a way to improve it.

The above is not an isolated opinion. Becker and Hayes, in their excellent work, *Information Storage and Retrieval*, express similar sentiments:

> *"To develop a classification scheme that will meet the needs of all potential users in any given organization is exceedingly difficult if not impossible. Tough semantic questions enter into the problem, and they are inflamed by the belief of every specialist that he and he alone is competent to classify the field of his own specialty. It is noteworthy that no two such specialists, even when working together in precisely the same field, can come to 100% agreement on how their data should be categorized."* [1]

Another thing. A thesaurus requires a considerable outlay of money. It would be interesting, also significant, if anyone could calculate the exact costs of the *ERIC Thesaurus*, or even come up with an estimate. One million? Two million? Four? Any of those figures might be correct, depending on what specific tasks were admitted to be thesaural in nature. Whatever the cost, one can be assured it is high and would discourage anyone about to pioneer the construction of a new thesaurus.

As one might expect, it was indeed Peter Mark Roget who first popularized the word "thesaurus". Published in 1852, and organized in terms of words related to concepts, his *Thesaurus of English Words and Phrases* pointed the way for all modern thesauri. However, the adaptation of a thesaurus to an information retrieval system is a very recent development, having first been referred to in an IBM journal in 1957. The first thesaurus actually created for controlling the vocabulary of an information retrieval system was one which the DuPont Company developed about 1959. The well known *Thesaurus of ASTIA Descriptors*, which the Department of Defense sponsored, was first published in 1960. Another famous thesaurus, the *Chemical Engineering Thesaurus* (American Institute of Chemical Engineers) appeared in 1961.

A few more landmark thesauri. The first edition of *Medical Subject Headings* appeared in 1960, but the 1963 second edition was specifically designed for use in the postcoordinate, machine-based MEDLARS* system. In 1964, the Engineers Joint Council published its famous and influential *Thesaurus of Engineering Terms*. Then, in 1967, after many years of labor, with the participation of almost everyone in Washington who was even remotely involved with vocabularies, the Department of Defense published the monumental *Thesaurus of Engineering and Scientific Terms*. [2]

Building the *ERIC Thesaurus*

The very early feasibility study of Tauber and Lilley (1960), for establishment of an educational media information service, found a severe classification and subject heading problem: *"The generalization that occurs to the consultants is that this aspect of bibliographic control requires considerable work if an efficient information service is to be established."* They implied this was as true for the general field of education as it was for educational media. [3]

Allen Kent and his Western Reserve University investigative staff, in recommending the establishment of ERIC, were well aware of the storage and retrieval problems relating to education. They recognized the broad difference in terminology that existed between the social sciences and the physical sciences.

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*Medical Literature Analysis and Retrieval System.

> *"This difference,"* they wrote, *"is often characterized by the word 'soft'——as opposed to 'hard'——to denote the comparative precision with which the concepts of the two fields can be defined and expressed in words. The relative 'hardness' or precision, of the terminology of the natural sciences is partly the result of long historical growth during which the disciplines have been ordered. It is partly due to the nature of the matter with which these sciences deal. To the degree that a science deals with living organisms, its terminology must inevitably be 'softer'. And in the social sciences where the matter is man and society, the highest degree of 'softness' exists."*

Beyond the inherent differences between the two areas, the recency of some social sciences——including "education——has not yet allowed a solidified language characteristic of that for chemistry, physics, botany, engineering, and so on. In addition, the interdisciplinary problems of educational research were very far-reaching. An educational thesaurus had to identify and gather terminology from widely scattered, constantly changing sources. Constructing such a thesaurus was like trying to shoot down a moving target.[4] Even if you hit the target, you were not sure it was the *right* target or that it would not be replaced by another, moving even faster.*

As a part of the ERIC feasibility study, Western Reserve was asked to collect about 4,000 documents in the field of educational media and the general educational research area. Also, Kent and his colleagues obligated themselves to index and abstract these documents, which meant that they had to accomplish considerable thesaural effort.[5] In the fall of 1964, Gordon C. Barhydt, also of Western Reserve University, proposed to ERIC that he and his coworkers, Charles T. Schmidt and Kee T. Chang, develop a complete thesaurus of educational terms. But because of contractual delays, actual work did not start until January 1965 and full-fledged effort not until October 1965. The primary source of the terms was the *Semantic Code Dictionary of Education Terms*, containing 10,000 index terms, which Western Reserve people (under several grants) had culled from indexing efforts involving 6,500 documents. Barhydt and his aides, however, found too many media and basic psychological terms in this list; therefore, they chopped the total down to about 4,500. The total list was divided into 17 facets, or generic classes. The facets were divided into smaller clusters, or subfacets, and the latter, in turn, were divided into groups. The Barhydt thesaural recommendations were published in June 1966.[6]

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*The author has had some peripheral experience with thesauri in the "hard" sciences and is well aware that some interdisciplinary workers would have substantial argument about the comparative ease in working with "hard" science thesauri. There, too, are interdisciplinary problems. There, too, are problems relating to nomenclature and the "fuzziness" of words. There, too, are the problems of changing concepts geared to the fast changing technological developments. The fact is that no thesaurus is a simple-minded venture.

But that is getting ahead of the story, for in the meantime, Burchinal had launched other efforts to get the thesaurus ball rolling. During 1965 there were already several groups involved with indexing and abstracting documents for Operation Fingertip and some of them had been forced into various degrees of thesaural activity. It was time to coordinate these efforts and compile a cohesive set of terms. Burchinal wrote a memo, dated September 23, 1965 which set things in motion.

> *"Recent developments within ERIC necessitate the formation of a Terminology Control Group (TCG) which should lead to the eventual creation of a Thesaurus of Educational Terminology....Various groups outside the Office are currently involved in the investigation of vocabulary construction in several fields of education. Harvard, Western Reserve, Syracuse, and Colorado have done basic work in this area. There are also internal Office of Education groups working on vocabulary construction. Most of these groups should have a voice in the construction of a finalized Thesaurus through the TCG. Some of them should have actual representation on the TCG."*

For chairman of the group Burchinal chose Eller, of the ERIC staff, who had previous experience with thesauri at the Armed Services Technical Information Agency and the Federal Aviation Agency. The other original group members were:

NAME	POSITION	ORGANIZATION
Marianna Haberle	ERIC staff	
Allan R. Lichtenberger		Office of Education National Education Statistics Center
Gordon Barhydt	Director	Center for Documentation and Communications Research Western Reserve University
Frederick Goodman	Professor of Education	University of Michigan
Terry Gillam	Chief, Lexicography	Defense Documentation Center
Peter F. Regan		SUNY at Buffalo[7]

The first meeting was held in New York at the Region II HEW Headquarters, 42 Broadway. Besides those mentioned above, there were about a dozen observers who had been contacted as having a direct interest in the proceedings. Haswell and Kennedy were there as well. The verbatim minutes of this meeting reveal considerable conversation which meandered indecisively around the subject of what exactly it was the group should do. This was surprising, for Eller had a penchant for decisiveness and decision-making. The only real progress the group made was the appointment of a small committee charged to come up with a charter, or a set of guidelines for the group's future guidance. Another decision was adoption of a new name for the group: the Panel on Educational Terminology (PET).[8]

The PET group met almost every month and began to pick up speed as early as 1966 when it published the short, but important *Guidelines for Development of a Thesaurus of Education Terms*. This document listed the purposes of PET:

"1. *To assist in defining the nature and scope of an education thesaurus.*

2. *To elicit cooperation in building the thesaurus.*

3. *To recommend guidelines and rules for thesaurus preparation.*

4. *To provide continuing guidance in implementing the thesaurus."*

These were quite general and vague enough to give PET almost *carte blanche* to do whatever it might think necessary for vocabulary development. However, the third purpose was specific and committed PET to come up with a set of thesaural rules. But in February they were still in the starting gate and could only express four general thesaural requirements:

"1. *It must be usable at national, regional, and local levels.*

2. *It must be comprehensive; that is, it must represent all areas and aspects of education.*

3. *It must be appropriate to the needs of research producers and consumers.*

4. *It must lend itself to continual revision and refinement."*

When these purposes and requirements were issued in early 1966, there was no thesaurus of educational terms available. Therefore, this same document offered preliminary guidelines, which Barhydt had prepared, to help those people at Central ERIC, as well as ERIC contractors, who were engaged in indexing and abstracting operations. In the existing free indexing environment, the guidelines asked the indexers to keep records in such a way that they could supply the terms and their frequency of usage when ERIC arrived at the stage of actually putting the thesaurus together. Also, the guidelines asked them to control subject concepts through usage of cross references such as: *"Use, Used for, Broader term, Narrower term, and Related term,"* according to the guidelines which the Engineers Joint Council had issued the previous year.

The remainder of the Western Reserve guidelines reflected ERIC's strong research orientation, despite the lip service to consumers in the general requirements. Many users, it was felt, who were interested in the experimental literature, would appreciate a clear statement of identifiable elements of an education experiment and the relationships between them. For example, indexers were asked to index by the population dealt with, the characteristics of the population, the research methodology, the teaching or learning process, and the independent and dependent variables. Except for requiring the precise indexing of experimental variables, these early categories were fairly close to the indexing checklist which continued to be listed in the ERIC indexing guidelines up to the present time. The criteria specified at that time for choosing new index terms also resemble the current *Rules for Thesaurus Preparation*, including the importance of frequency of occurrence, the need to select the specific term required (and not a broader term), and the necessity to use compound or multiword terms (pre-coordinated terms) when such terms appear to be standard usage in the natural language of education. Despite the inclination toward research, Barhydt did not exclude other categories of potential ERIC users: *"Terms must be selected from the points of view of highly specialized researchers, teachers, school and nonschool administrators, legislators, journalists, and others. Terms should not be limited to those of a scientific or technical nature."* [9]

During the 1965-66 period, Eller and other Central ERIC people, including Burchinal, became deeply involved in thesaurus activities. Eller, besides his preoccupation with the PET group and all the arrangements he had to make for PET meetings all over the country, was also trying to keep tabs on other thesaurus and indexing activities, such as a continuing coordination with Project LEX (the Department of Defense thesaurus development program) and the Vocabulary Panel of the Engineers Joint Council. For example, when PET began the tedious process of ERIC thesaurus rules preparation, the panel members had to consider the *Rules for Preparing and Updating Engineering Thesauri*. They also received current copies of the LEX conventions as soon as they appeared. In addition, ERIC staff members held membership on a COSATI subpanel on classification and indexing which was then struggling with conventions for thesaurui. [10]

Another thesaural development project was going on which had not yet been mentioned. Jonker Business Machines, Inc. had a contract with ERIC for the indexing and abstracting of disadvantaged and higher education documents in support of Project Fingertip. A supplemental part of that contract called for the preparation of a thesaurus of terms which they had used in that activity. This work was under the direction of Christoff Schubert, Basil Doudnikoff, and Keene Taylor. [11] On May 12, Jonker delivered to Central ERIC a camera-ready copy of a thesaurus of approximately 2,300 educational terms which had been accumulated during the cataloging work. In the introduction of this *Thesaurus of ERIC Descriptors: Phase I,* it was emphasized that this was only the beginning of a ERIC thesaurus:

> *"First, the 1,740 documents from which this thesaurus was developed, concern the education of disadvantaged children mainly at the preschool, elementary, and secondary levels. From this standpoint, then, the thesaurus certainly cannot be considered to cover comprehensively all types of education at all levels. Rather, it reflects a specific subject area at specific levels within the vast interests of the educational community. Even within the limits of the subject area considered, this cannot be considered a comprehensive thesaurus. In nearly all cases, the terms which appear were found within the documents in the collection. There has been only a modest attempt to add other terminology, to present all of the meaningful cross references, or to bring all of the synonyms which might be appropriate into the word list. In short, the* Thesaurus of ERIC Descriptors: Phase I *is only a beginning in many ways, but there must be some starting point for critical consideration."* [12]

As indicated previously, Western Reserve University submitted its final report, *The Preparation of a Thesaurus of Education Terms*, in June 1966. This document listed 4,500 terms, illustrated and explained the faceted structuring methodology, and also indicated that it represented only a beginning thesaurus step.[13]

On May 9, ERIC had selected North American Aviation as its Facility contractor. This contractor, fortunately, already had considerable thesaural experience, including about a year's experience of having the Engineers Joint Council thesaurus on computer tape and adapting the software and hardware techniques for an internal North American Aviation thesaurus.[14]

Eller and the PET group, with Burchinal's blessing, decided to abandon Western Reserve's faceted array of terms. Why? Two reasons:

- they thought it somewhat inflexible and not consistent with other information retrieval vocabulary systems then being developed in the U.S.;
- the Western Reserve thesaurus was incompatible with the new ERIC Facility's vocabulary software developed for thesaurus computer manipulation.

One additional question should be posed: Why did the PET group not ask for a merger of the two thesauri? Because of the low overlap of terms. Only 23.3 percent of the Jonker terms were in the Western Reserve Thesaurus — or in other words, 87.7 percent of the Western Reserve terms did not appear in documents stored in the ERIC system. Thus, at this early stage the precedent was set for what still remains true for the ERIC thesaurus: it is an "authority list" and not really a theoretically comprehensive "thesaurus"; only those terms are accepted for the thesaurus which are actually used to index documents for inclusion in the ERIC data base.

Since the very first meeting of PET, Eller and his fellow panel members had been struggling with a set of rules for the ERIC thesaurus. Almost every meeting devoted at least a part of its effort to discussing the latest draft of the rules. It was not the length that was the problem;

in fact, if they were longer they might have been easier to write. They were in fact, very short, but also very succinct, very clear, and very dogmatic. The rules appeared in October 1966, with the following sensible and informative introduction:

> *"These rules are designed to help the ERIC Central Staff and the staffs of the Clearinghouses make similar decisions with respect to the addition and modification of terms in the ERIC thesaurus. Although these are not rules for indexing per se, they will be invoked when an indexer or his supervisor finds that there is no term in the thesaurus that is satisfactory for expressing an important concept found in a document. When this occurs, the indexer will record what he considers to be an appropriate term to express the concept. That term then becomes a candidate for inclusion in the thesaurus. The rules are to be applied both in the selection of candidate terms and in the final decision to include the candidate term as a descriptor in the thesaurus.*
>
> *"Rules should be regarded as useful in guiding those who ultimately must decide on the details of the thesaurus. In this sense, a rule is analogous to a law in a 'case law' system rather than in a 'statutory law' system . Implementation of the rules is thus dependent on the development and analysis of specific cases involving them."*

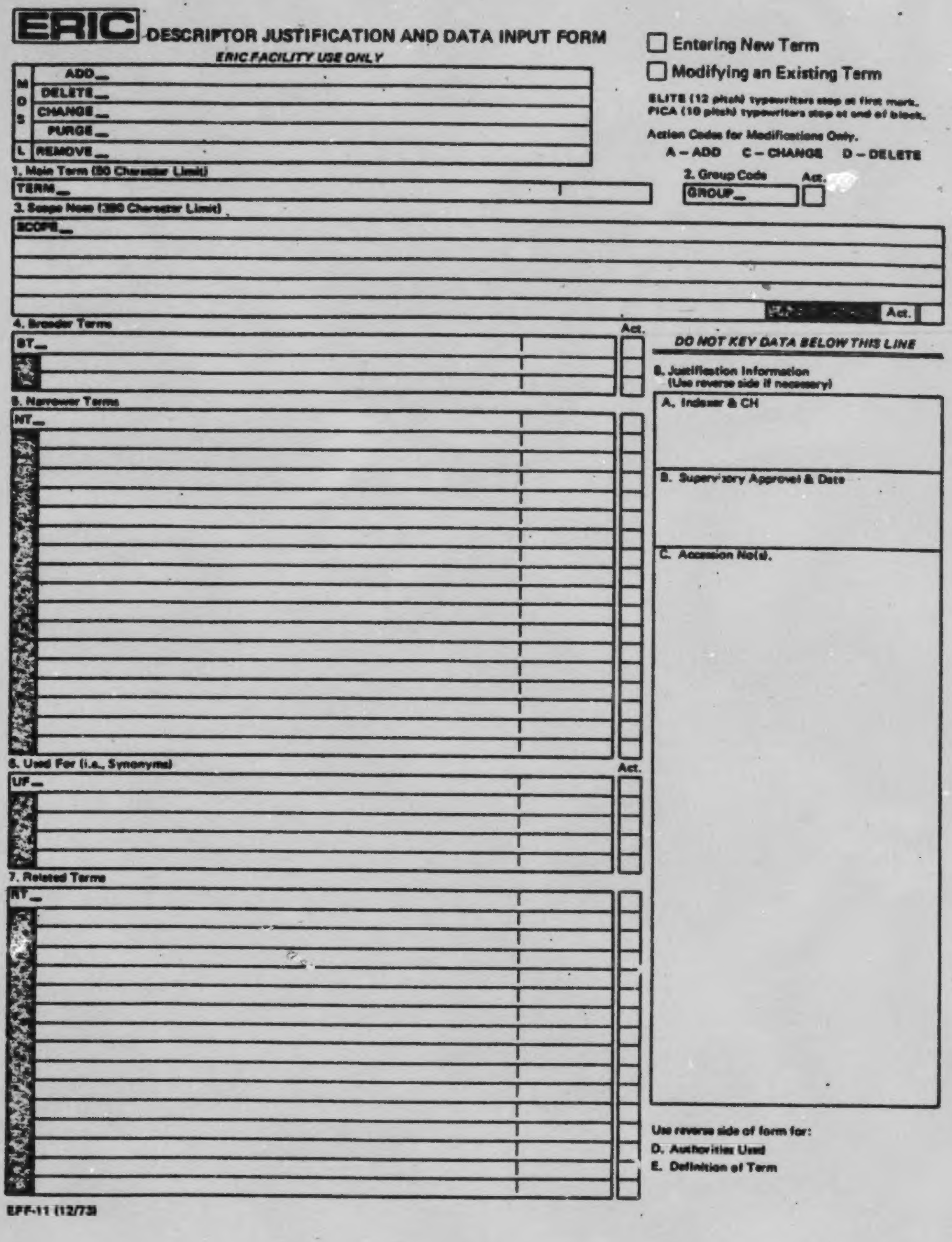
The rules themselves contained instructions on how to select descriptors and identifiers, how to assemble the cross reference structure, how to avoid ambiguity (particularly with reference to homographs and scope notes), how to construct descriptors (with notes on abbreviations, special characters, word form, and numerals), and how to set up the descriptor format (rules of alphabetization and cross referencing). [15]

The PET group issued a revision of the rules in September 1969, primarily to add a multiple broader term rule, to illustrate usage of the new descriptor groups, to explain rules for the construction of identifiers, and to show an example of the rotated display . Many years later, in some remarks to the members of the Vocabulary Improvement Committee during April 1978, Houston, the ERIC Facility lexicographer stated: *"After all the time that has passed, the* Rules for Thesaurus Preparation *may finally need revision once more. Updated examples of the Descriptors would be worthwhile; the new Thesaurus Hierarchical Display could be shown, and more complete Identifier guidelines could be added."* [16]

During the six-month period of its existence, the "Phase I Thesaurus" was in a dynamic state of development. In the first place, it was actually used by indexers, primarily those at the ERIC Facility, to process documents for the ERIC data base. This thesaurus edition was used as the primary source for those documents appearing in the first few issues of RIE, the first monthly volume of which appeared in November 1966. Also, when it first appeared in print, the "Phase I Thesaurus" was quickly dispatched to over 300 educators and information specialists for critical evaluation. About 500 recommendations arrived and the ERIC Facility had to review each one for possible value. In addition, as the ERIC Facility indexing group began to process documents, they naturally found it necessary to add new terms to the thesaurus.

The addition of new terms had to be systematized——the process was getting far too complicated to continue the free indexing methodology. Therefore, the PET group authorized the "Descriptor Justification Form." (see Figure 17). Perhaps the most important part of this form is justification of the candidate descriptor by reference to "authorities" such as dictionaries, thesauri, and other publication, so that its usage and meaning can generally be considered standard or accepted. It was in fact true, however, that the indexers at the ERIC Facility, almost from the very beginning of their indexing and thesaural efforts, had been using an internal version of the descriptor justification form.[17]

All participants in the ERIC system——both past and present——should be grateful to the dedicated North American ERIC Facility indexers and lexicographers who struggled with educational terminology, particularly during the years 1966 and 1967. Robert L. Panek was the Facility lexicographer and working at his side were Marlys Cybulski, Eugene Urbaniec, William Burgess, and several others. Also, Panek's boss, Ebersole, contributed a large amount of time to thesaurus activities. The spearhead of the whole operation was Eller. He made frequent week-long trips to the West Coast North American plant, worked with the indexers and lexicographers, kept up-to-date with all activities and schedules, offered recommendations on how to proceed, coordinated activities with PET and Central ERIC officials, and made the many necessary decisions.



ERIC DESCRIPTOR JUSTIFICATION AND DATA INPUT FORM

☐ Entering New Term

☐ Modifying an Existing Term

ELITE (12 pitch) typewriters stop at first mark.
PICA (10 pitch) typewriters stop at end of block.

Action Codes for Modifications Only.
A – ADD C – CHANGE D – DELETE

ERIC FACILITY USE ONLY

M O S: ADD__
DELETE__
CHANGE__
PURGE__
L: REMOVE__

1. Main Term (50 Character Limit)
TERM__

2. Group Code Act.
GROUP__ ☐

3. Scope Note (360 Character Limit)
SCOPE__
Act. ☐

4. Broader Terms Act.
BT__

5. Narrower Terms
NT__

6. Used For (i.e., Synonyms) Act.
UF__

7. Related Terms
RT__

DO NOT KEY DATA BELOW THIS LINE

8. Justification Information
(Use reverse side if necessary)

A. Indexer & CH

B. Supervisory Approval & Date

C. Accession No(s).

Use reverse side of form for:
D. Authorities Used
E. Definition of Term

EFF-11 (12/73)

FIGURE 17: DESCRIPTOR JUSTIFICATION FORM

In January 1967, ERIC Central published, via GPO, the *Thesaurus of ERIC Descriptors (Interim)*. This edition incorporated corrections and changes which resulted from the solicited critical remarks, contained additional descriptors which resulted from indexing Office of Education (largely Bureau of Research) reports, and included revisions which conformed to the rules released in October 1966. Then, as a result of additional terms from indexing at the ERIC Facility and the ERIC Clearinghouses, the first *bona fide* edition of the thesaurus came out, bearing the date December 1967. This first edition contained a rotated descriptor display which provided the user with the additional assistance of a simple alphabetic picture of all words in the thesaurus, including those in multiword terms.[18]

Because of the large amount of debate, thesaural detective work, scheduling, and planning which went into revisions or improvements to the thesaurus, the PET members were involved in discussions which had a long lead-time for actual implementation. Thus, one must go back to early 1967 to find them preparing futuristic changes. In February 1967 the panel wrote a proposal to Marron for certain changes which would require considerable expenditure of time and money on the part of the ERIC Facility.

> *"A significant investment has already been made in the creation of a thesaurus of educational terms. To realize the maximum return on this investment, the Thesaurus should be analyzed and displayed in ways which will guarantee that:*
>
> *(1) the Thesaurus created to date will be utilized more effectively for purposes of indexing and searching;*
>
> *(2) the Thesaurus will develop in a more controlled fashion;*
>
> *(3) the Thesaurus will serve as an aid to those responsible for:*
>
> *(a) assessing the needs for additional documents,*
> *(b) dissemination information, and*
> *(c) coordinating the work of ERIC with other programs of the Office of Education and other information handling efforts of the federal government."*

To help meet these laudable goals, the panel members felt that it would be very helpful to analyze and display the thesaural terms to make visible a more complete picture of the hierarchies in broad categorical arrangements so as to show another kind of term relationship. *"Both displays would facilitate the training of indexers, searchers, and lexicographers. They not only would allow inexperienced people to move about through the terminology more quickly and completely, but would permit experienced documentalists to see the difference between this thesaurus and others which they have used."* [19]

The first priority was the categorization of terms, called the "Descriptor Group Display". From a list of 91 candidate groups, the terms were arranged, shuffled, and shifted from group to group until finally a list of 52 groups was determined to be the most meaningful and logical. The groups first appeared in the third edition of the thesaurus, which was published in 1970.

Next came the hierarchical display. After some preliminary work on the part of the Facility, the PET members chose the occasion of their April 24-25, 1969 meeting to discuss the new display. Immediately they saw a problem:

> *"A preliminary analysis of the Hierarchical Display confirmed many of the suspicions which the Panel has had with respect to problems inherent in the existing Thesaurus. It has also revealed that many aspects of the Thesaurus appear to be substantially accurate. Unless the problem areas are corrected very quickly, however, they will not only be extended and compounded as new terms are added, they will drastically reduce the value of the present descriptors for searching."*

The basic problems, the panel members felt, were twofold:

- there were duplications of terms at different levels and
- there was, in some instances, a failure to follow the logical placement of a term all the way through its hierarchy.

But the problems uncovered would require a very large work effort to correct. Therefore, the panel members gave their opinion as to the nature of corrective action:

> *"At this stage, the Hierarchical Display should not be viewed as analogous to the Group Display. That is, the Panel is not recommending that anyone expend energy creating an improved version of the Hierarchical Display. The panel's recommendation relates to the need to improve the Thesaurus itself. Indeed the utility of the Hierarchical Display* in its present form *seems already to be clearly established for purposes of analyzing the Thesaurus.*
>
> *"It appears to be beyond the resources of either the Panel or the ERIC staff to make the kinds of corrections needed. The Panel therefore recommends serious consideration be given to the use of contracted assistance to clean up the discrepancies exposed in the Thesaurus. Such a process will involve the removal of logical inconsistencies, placement of isolated terms, and the purging of damaging descriptors."* [20]

Because nothing could be done immediately, the hierarchical display was allowed to stand as it was for inclusion in the sixth edition of the thesaurus, which emerged from GPO in 1975. The seventh edition, dated 1977, contained a two-way hierarchical display carrying each hierarchy to its furthest extension in both the broader and narrower directions.

Today's Thesaurus

As it exists today, the *Thesaurus of ERIC Descriptors* is an imposing document which, to the uninitiated, has the appearance of alarming complexity. But except for the most casual searcher, any person interested in finding documentary or journal literature in the field of education would profit from a few minutes exploration of the document. And it really is not all that complex. Some educators——those in graduate school educational programs, or researchers——should become intimate with the thesaurus; for not only can it lead to specific subject areas already in mind, but it allows browsing among educational terms and gives clues to peripheral terms. The gatekeepers, the librarians, the information specialists, the intermediaries, or whatever one wants to call them, are people who should study the thesaurus, know its strengths, understand its weaknesses, and be aware of its peculiarities, for most of these people are involved in doing computer searches of the ERIC data base. The more they know about the thesaurus, the better their searches will hit precise documentary targets.

The current thesaurus, the seventh edition, bears a copyright date of 1977 and actually was available for sale in early 1978. Statistically, it contained: [21]

Main Terms (Indexable Terms)	5,158
Synonyms (Cross-References)	2,724
Total Terms	7,882

The thesaurus has four principal parts:

(1) The descriptors (an alphabetic display),
(2) The rotated descriptor display,
(3) The two-way hierarchical display, and
(4) The descriptor group display.

Also, there is appended a useful bibliography which lists dictionaries, encyclopedias, classifications, and other works, which might be useful to anyone involved with the ERIC thesaurus, its upkeep, or its modifications.*

As it appears in the seventh edition, the word list of today is a much different one than in the Jonker thesaurus of June 1966. Greatly expanded. Much changed. That is largely true because Eller and the PET group adopted North American's procedure for adding words. Thus, the development, expansion, and change of the thesaurus are all decentralized activities in the form of contributions from the Clearinghouses, the CIJE contractor, and the ERIC Facility. Each organization makes recommendations for new terms or changes to old terms. Applications for new terms are recorded on the Descriptor Justification Form (DJF); recommendations for changes to existing terms are recorded on a Term Change Notice (TCN).*

---

*See the *Thesaurus of ERIC Descriptors*, 7th edition, Macmillan Information, New York, 1977, for a "Summary of Contents", which provides a concise description of what is in the thesaurus. The summary was written by Houston, current ERIC Facility lexicographer. This edition also contains "The Role and Function of the Thesaurus in Education", which is an excellent, but somewhat outdated, discussion of the philosophy and background of the thesaurus. This was written by Frederick Goodman, of the University of Michigan and former PET member.

**Term change notices are discussed in the section under the vocabulary improvement program.

Each ERIC organization lends its own strength to the subject terminology. This strength, however, could be a weakness if each clearinghouse submitted only its own interpretation of words. Therefore, when one clearinghouse submits a DJF, it consults references in other fields of education so as to understand all possible meanings, implications, and usages of the term throughout the educational world. Principally, however, this interpretive judgment is the job of the ERIC Facility lexicographer. In addition, the lexicographer reviews all candidate descriptors to make sure they maintain consistency, avoid proliferation, clarify any potential ambiguities, and conform to thesaurus rules and guidelines.[22]

As can be seen from the reproduced DJF form (see Figure 17), it is not a simple exercise to justify a new term, if one does it properly. But despite the difficulty, the clearinghouses have been very conscientious in submitting new terms and scrupulous in completion of the DJF form. For the adequate submission of DJF's and their careful preparation allow the clearinghouses to describe and index documents more accurately and facilitates retrieval of those documents once they are in the data base.

How good is the thesaurus? That is a question which challenges ERIC managers, clearinghouse indexers, ERIC Facility lexicographer, and above all, the information specialists who use it for making searches. As indicated previously, the first printout of the hierarchical display in 1969 revealed problems of duplication and logical arrangement of terms. So, from that point onward, the ERIC people who were involved with the preparation, changes, and additions to the thesaurus, were anxious to improve it. By and large, the information specialists did not complain loudly about the thesaurus. It was what they had to work with; they learned its characteristics and dealt with them in a constructive manner. There was virtually no pressure from outside of ERIC for changes; and few complaints about its limitations.

In fact, the only critical, unbiased evaluation of the thesaurus appeared after ERIC had already initiated its concentrated improvement program. This evaluation was a cooperative study on the part of four graduate library students of the Liverpool Polytechnic Department of Library and Information Studies. They found a few disturbing characteristics:

(1) Dr. Goodman's notes were interesting, but "overlong";
(2) A valuable addition would be expanded instructions on how to use the thesaurus;
(3) The two-way hierarchical display was confusing;
(4) The multiword term policy appeared inconsistent; and
(5) The distribution of scope notes was erratic.

The Liverpool students, however, decided that they preferred the layout and appearance of the ERIC thesaurus to several other recent educational thesauri: the London Education Classification, the UNESCO-IBE Education Thesaurus, and the EUDISED Thesaurus. In their conclusions, the student research team stated:

> *"The thesaurus is actually very easy to use, the multi-type presentation and the cross-referencing system being contributing factors to this. The typical user, therefore, ought to find few problems in using the thesaurus to carry out his research strategy, or as a word-list, once its idiosyncrasies have been understood."* [23]

IDENTIFIERS

Not yet mentioned in the historical development of the thesaurus, is a very important adjunct, the identifier list. Identifiers are, almost always, the names of specific entities. Examples are such items as:

IDENTIFIER TYPE	EXAMPLE
Acronyms	ARISE (Adult Referral Information Service on Education)
Coined Terminology	Free Schools
Conferences	National Reading Conference
Course Catalog Listings	Auto Mechanics for Women
Equipment	IBM 360

IDENTIFIER TYPE (Continued)	EXAMPLE (Continued)
Ethnic Groups/Tribes	Southern Paiutes
Geographic Locations	Yakima Valley
Legislation	Civil Rights Act 1964
Methods and Theories	Montessori Method
Personal Names	Hemingway (Ernest)
Projects	Project Talent
Tests and Programs	American College Testing Program
Textbooks	Random House Dictionary of the English Language
Trade Names	Smokey the Bear
Organizations	Iowa State University

A list of such words, as one can easily discern, could be practically infinite; also, many identifiers are more or less ephemeral. For these two basic reasons, an early ERIC decision separated them from the thesaurus. So from the early days of indexing for the data base there grew up a so-called "identifier list", which was used in all indexing activities.

The *ERIC Processing Manual* explains the function of identifiers as follows:

> *"The major purpose of identifiers is to provide additional indexing depth, of a specialized nature, supplementing that provided by descriptors. Identifiers may be specific projects, geographic locations, persons, trade names, tests, legislation, organizations, equipment, etc. It is also possible to use the identifier category as a testing ground for a term whose permanence may be in some doubt. If the term demonstrates over time its acceptability by the profession, it may graduate from Identifier to Descriptor status, e.g., Computer Assisted Instruction (CAI). Identifiers are not defined (scoped), cross-referenced, structured (related to one another), or otherwise subjected to lexicographic analysis."*[24]

A simple alphabetical list of identifiers was never published, although the Clearinghouse on Science, Mathematics, and Environmental Education took responsibility for printing a "Descriptor and Identifier Usage Report", which proved to be a valuable searching tool, particularly for the computer searching mode. However, the freedom allowed in the usage of identifiers in the indexing of ERIC documents, the occasional lack of control in the clearinghouse indexing activities, and the difficulty of assigning enough personnel time at the ERIC Facility for review and editing of identifiers, all served to create a multiplicity and complexity of identifiers. The classic case of confusion, for example, was the term "Elementary Secondary Education Act Title III", for which 17 variations existed in the file. The situation became almost intolerable for both indexers and searchers; therefore, in 1976 Central ERIC asked the ERIC Facility to launch an identifier clean-up program.

When the Facility lexicographer, Houston, and a lexicographic consultant, Mary McCord, delved into this messy situation, they came up with the amazing total of 46,672 items which appeared in the data base as identifiers. They sorted out all of the terms into 25 categories for easier handling. This alone was not an easy task; to illustrate their plight, 4,457 identifiers were placed into a "miscellaneous" category, 928 into a "don't know" category, and 82 into a "garbage" category. Each clearinghouse received one or more categories and the Facility people also worked on several categories. The task at hand, of course, was to reach a decision for the preferred form (or deletion) for each identifier. After the clearinghouses completed their work, the plan was to check the returns for conformance to the rules for identifier construction, make the appropriate changes in the backfile of RIE and CIJE, and publish a comprehensive identifier authority list. Plans also included a semiannual update of the list.[25] Although the cleaned up identifier list was expected to be published in early 1978, the Facility lexicographer became deeply embroiled in the program for improving the ERIC thesaurus; thus, publication of the identifier list appeared unlikely until some time in 1980.

The Vocabulary Improvement Program

As previously stated, when the PET group first studied the computer runs of the hierarchical display, the members became aware of obviously erroneous groupings and a significant number of individual discrepancies. The fact that the vocabulary grew from a free indexing core of terms, the fact that ERIC did not mount a herculean and expensive vocabulary program such as Project LEX in the Department of Defense, the fact that only *used* terms actually entered the thesaurus, the fact that terms trickled in through the years for individual rather than collective decision—all created a problematical environment for construction of an error-free word list.

Also, there were two additional problems which were peculiarly native to ERIC. First, the ERIC system had as many as twenty individual organizations scattered throughout the country which were indexing documents and submitting candidate terms, struggling to meet publication deadlines, and suffering from personnel turnovers. This category of effort was definitely a weakness in the otherwise attractive decentralized information system. Secondly, because of budget restrictions and because of the subtlety of the situation, it was probably true that Central ERIC did not allow the ERIC Facility a sufficient allocation of manhours for lexicographic activities.

In the current edition of the *ERIC Processing Manual*, Houston listed all the principal categories of thesaural problems which had become apparent:

"1. *Poor, incomplete, or invalid hierarchies;*

2. *Synonymy—Two or more terms which, for the purposes of ERIC indexing and retrieval, can be considered synonyms, e.g., HEREDITY and GENETICS;*

3. *Poor word choices, e.g., PUBLICIZE rather than PUBLICITY;*

4. *Misspellings, e.g., PARODOX for PARADOX;*

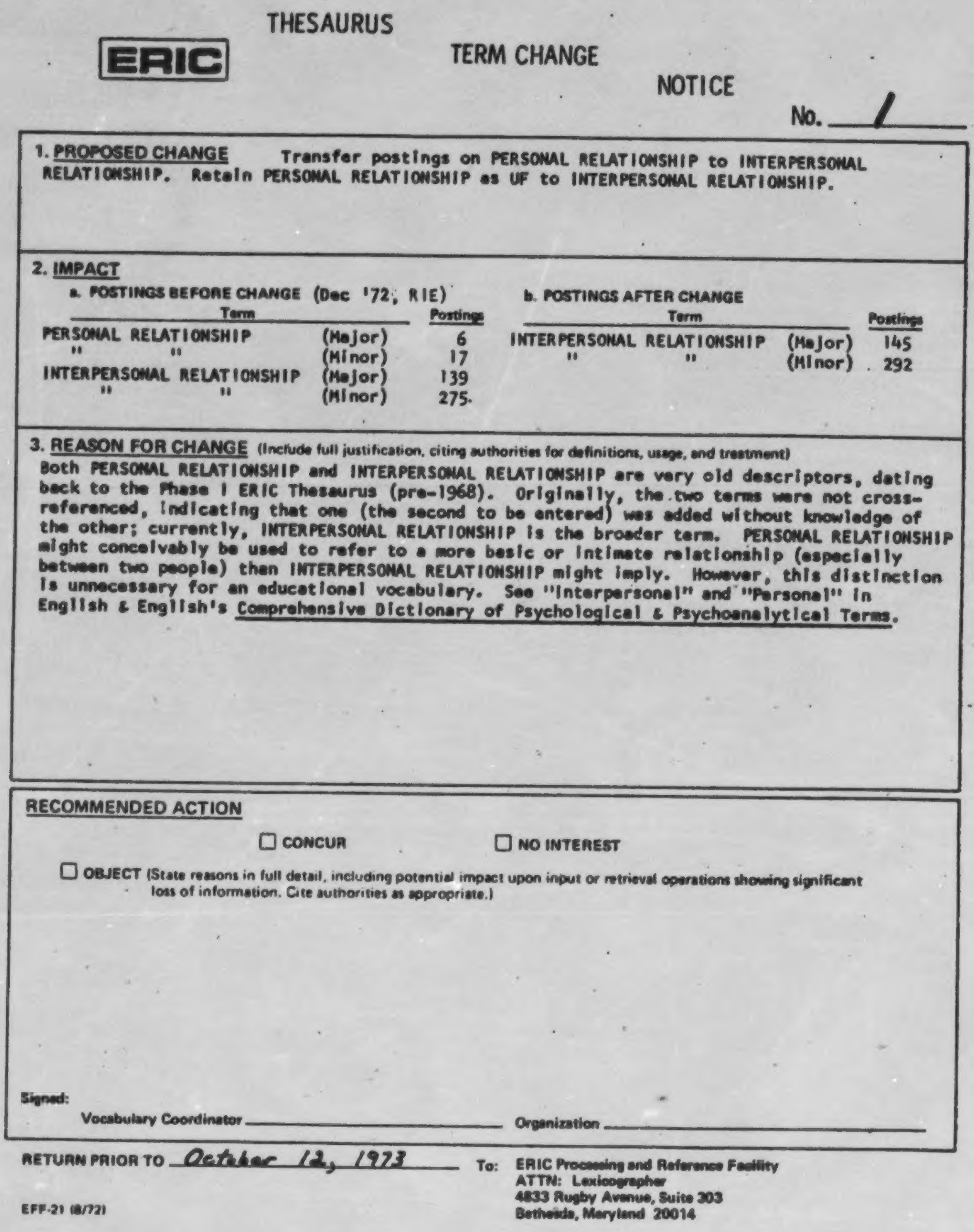
5. *Ambiguity, e.g., prior to the introduction of PROGRAMING (BROADCAST) in 1971, the term PROGRAMING has been applied to both computer programing and broadcast programing;*

6. *Low postings, e.g., HORIZONTAL TEXTS and VERTICAL TEXTS with one posting each from the 1966 Disadvantaged Collection."*

Prior to 1972, any change to the thesaurus was exceedingly difficult, particularly when the mistakes had existed long enough to influence hierarchies or create other subtle word and meaning dependencies. For example, to delete a term *"...it was necessary to prepare a separate transaction for each document indexed by that term in order to delete the term from the Resume Master Data Set, and it would then be deleted from the Satellite Master Data Set by the system. At the same time, if you wanted to avoid an intolerable loss of information, a second set of transactions had to be prepared, replacing the deleted term with the preferred term. Since the median posting density of Thesaurus terms is about 50 documents per term, about 100 transactions would typically be required to accomplish each change."* Under such severe computer limitations, it was too costly and time consuming to make thesaural revisions.

The above situation was, however, corrected in 1972. During that year, the Facility asked for and received support from Central ERIC for a concerted vocabulary improvement program. The development which propelled this program into reality was the Facility's so-called "transfer and delete" computer software techniques. This changed complexity to relative simplicity: one written transaction now would delete a term and transfer all of its postings to another term.

In concert with Central ERIC, the Facility set up a Vocabulary Review Group, the membership of which was chosen to achieve a broad base of coordination. As initially constituted, the group included all sixteen clearinghouses, ten university libraries, and nine state education departments. Recommended changes to the thesaurus could come from anyone who recorded the suggestion on a term change notice, such as that shown in Figure 18. The coordination of each change to the thesaurus (aside from a few minor changes) were achieved through a set of procedures as indicated in the flow chart (Figure 19).



ERIC

THESAURUS
TERM CHANGE
NOTICE

No. 1

1. **PROPOSED CHANGE** Transfer postings on PERSONAL RELATIONSHIP to INTERPERSONAL RELATIONSHIP. Retain PERSONAL RELATIONSHIP as UF to INTERPERSONAL RELATIONSHIP.

2. **IMPACT**

a. POSTINGS BEFORE CHANGE (Dec '72, RIE)

Term		Postings
PERSONAL RELATIONSHIP	(Major)	6
" "	(Minor)	17
INTERPERSONAL RELATIONSHIP	(Major)	139
" "	(Minor)	275

b. POSTINGS AFTER CHANGE

Term		Postings
INTERPERSONAL RELATIONSHIP	(Major)	145
" "	(Minor)	292

3. **REASON FOR CHANGE** (Include full justification, citing authorities for definitions, usage, and treatment)

Both PERSONAL RELATIONSHIP and INTERPERSONAL RELATIONSHIP are very old descriptors, dating back to the Phase I ERIC Thesaurus (pre-1968). Originally, the two terms were not cross-referenced, indicating that one (the second to be entered) was added without knowledge of the other; currently, INTERPERSONAL RELATIONSHIP is the broader term. PERSONAL RELATIONSHIP might conceivably be used to refer to a more basic or intimate relationship (especially between two people) than INTERPERSONAL RELATIONSHIP might imply. However, this distinction is unnecessary for an educational vocabulary. See "Interpersonal" and "Personal" in English & English's Comprehensive Dictionary of Psychological & Psychoanalytical Terms.

RECOMMENDED ACTION

☐ CONCUR ☐ NO INTEREST

☐ OBJECT (State reasons in full detail, including potential impact upon input or retrieval operations showing significant loss of information. Cite authorities as appropriate.)

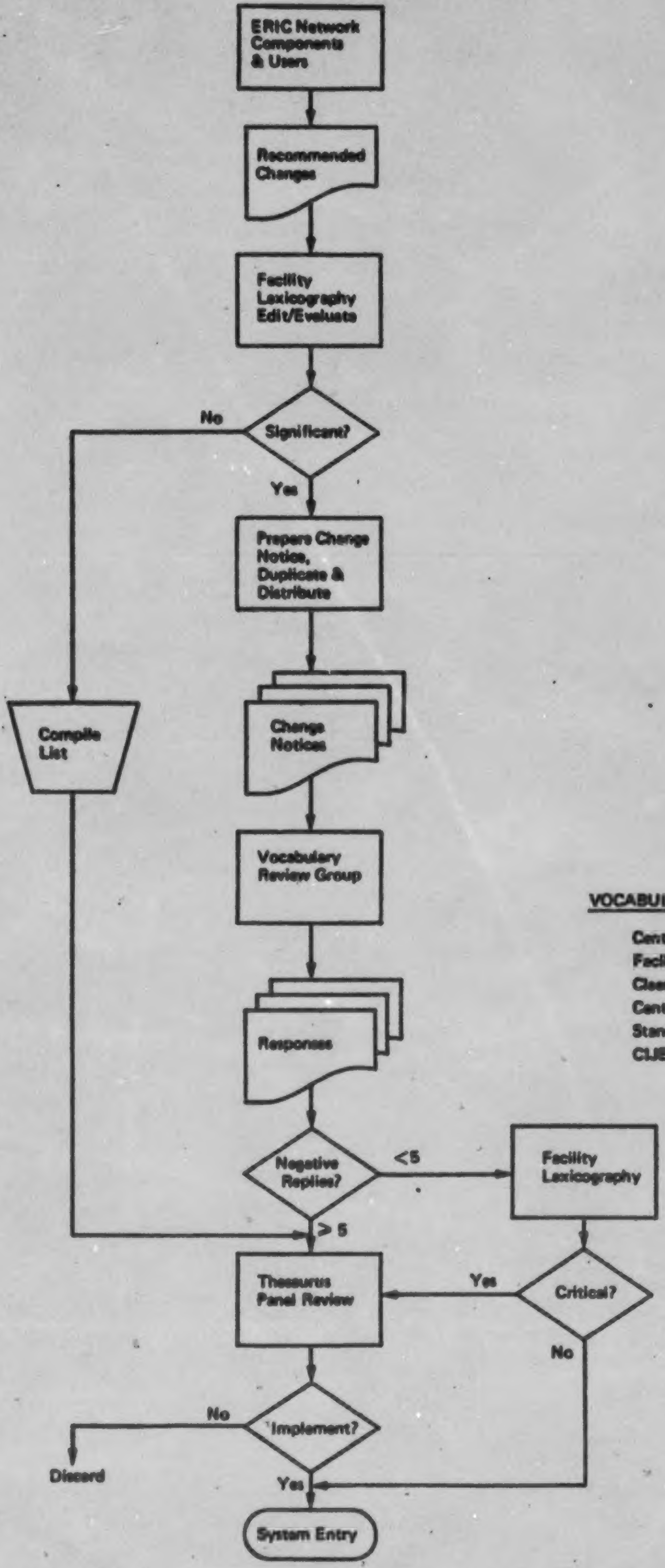
Signed:
Vocabulary Coordinator ____________ Organization ____________

RETURN PRIOR TO October 12, 1973

To: ERIC Processing and Reference Facility
ATTN: Lexicographer
4833 Rugby Avenue, Suite 303
Bethesda, Maryland 20014

EFF-21 (8/72)

FIGURE 18: ERIC THESAURUS TERM CHANGE NOTICE (COMPLETED FORM)


ERIC Network Components & Users
Recommended Changes
Facility Lexicography Edit/Evaluate
Significant?
No
Yes
Prepare Change Notice, Duplicate & Distribute
Compile List
Change Notices
Vocabulary Review Group
Responses
Negative Replies?
<5
> 5
Facility Lexicography
Critical?
Yes
No
Thesaurus Panel Review
Implement?
No
Discard
Yes
System Entry

VOCABULARY REVIEW GROUP

Central ERIC
Facility
Clearinghouses
Centers
Standing Orders
CIJE Contractor

FIGURE 19: THESAURUS CHANGE PROCEDURE

Also, the improvement program called for the establishment of a Thesaurus Advisory Panel, consisting of membership from Central ERIC, the Facility lexicographer, and several other members from outside the ERIC system. The panel reviewed term changes about which there was some indecision on the part of the review group and the panel also discussed and acted upon other vocabulary-related matters.[26] The panel was intended to be a replacement for the PET group which had been disbanded in the fall of 1970. The advisory panel did carry out its review of thesaural changes and recommended several minor improvements to the thesaurus which were implemented in the seventh edition. However, the meetings became much too sporadic to exert the influence it might have. And then, when the improvement program shifted into high gear, the advisory panel fell by the wayside.

Although the original thesaural improvement effort was effective, it appeared to Hoover and the Central ERIC staff that it would take too long to really accomplish a thorough thesaural cleansing job. This feeling became solidified during one of the technical meetings held at the Hilton Inn in Annapolis, Maryland in April 1976. Two days of this three-day workshop were spent discussing indexing, abstracting, and thesaural matters. Discussion leaders were Toni Carbo Bearman, Everett H. Brenner, and Gil Cintra, who constituted a consultant team from the National Federation of Abstracting and Indexing Services.

Partly because the consultants led the discussions in such a challenging and provocative manner, partly because the clearinghouse technical representatives felt obligated to defend the thesaurus and yet reveal their own feelings of its weaknesses, and partly because this was the first lengthy, free-wheeling, and systemwide discussion of the thesaurus, the entire two-day session proved to be a significant and valuable experience. Practically all participants expressed their interest in vocabulary reform and the managers in Central ERIC, particularly Hoover, felt the entire process had to be accelerated.

The budget situation, unfortunately, put a curb on any immediate action. Hoover had to let the situation drag on a bit, even though he was reluctant to do so. The only thing he could do was to accomplish some planning; therefore, in the latter part of 1976, when the Facility contract was renewed, he had inserted a small study project for the ERIC lexicographer. Essentially, the aim of this project was to determine if any other data bases had any experience with a concentrated vocabulary improvement program. So Houston contracted several systems which had been suggested as possibilities:

- the Engineering Index;
- the National Technical Information Service; and
- the Chemical Abstracts Service.

None of them, he found, actually ever had instituted any formal improvement project.

Houston detailed all his contacts with these organizations and stated:

> *"There can be only one major conclusion with the results of the Ei/NTS/CAS survey on vocabulary revitalization: that the ERIC Vocabulary Improvement (VIP) truly is ahead of the times. Rather than be disappointed with the limited results of this survey, we can be pleased to know that we have a unique, innovative system that will work if we in the ERIC network can find the necessary time, perserverence, and, of course, funding."*

In his thinking about the technical procedures involved in an improvement program, Houston became completely convinced that clearinghouses should participate to the fullest degree. *"We must first require the involvement of the ERIC clearinghouses. Being the true builders of the vocabulary, their active and solicitous participation is necessary before there can be significant improvements."* In addition, he also recommended that some provision be made to allow users to make suggestions and recommendations to the overall improvement activity.[27]

Did Houston have any ideas as to exactly how the clearinghouses should be involved? What kind of structure should there be: Would Houston do another think piece on *that* subject? He would and he did. On March 25, Houston spelled out some ideas on a joint clearinghouse-Facility program which would utilize the national technical meeting and the regional technical meetings. This plan called for a clearinghouse-elected chairperson, and assigned each clearinghouse responsible for vocabulary changes in its own general scope of interest.

However, the key statement in the Houston plan was his advice that:

> *No attempt should be made at this time (in this memorandum or elsewhere) to write guidelines or to spell out specifics of the Clearinghouses' work on vocabulary improvement. Without Clearinghouse input, such an attempt by the Facility Lexicographer would be premature. Clearinghouses want to be involved in the whole sphere of vocabulary improvement activities, including activity planning, problem identification, impact research, change recommendation, and change approval."* [28]

At this point, Hoover felt he had laid the necessary groundwork for action. The two Houston studies might be modified, but he had enough ideas to work with. Soon he saw a breakthrough in the foggy budget horizon; it began to look promising for an improvement program to begin during Fiscal Year 1978. Therefore, in May 1977 he dispatched a long memo to Mason, the Acting Division Chief.

> *"During the past six years,"* Hoover stated, *"when the ERIC budget has been in practically a zero rate of growth, the most significantly neglected area has been the large sphere of activities which relate to the ERIC Thesaurus. Although we were aware that the ERIC vocabulary situation was in need of repair, we hoped it was something we could postpone while devoting our funds to other more immediate priorities plus the need for some computer system software now available. Recently, we have become aware that we have what could become a major problem on our hands. For the state of health of the ERIC Thesaurus along with indexing procedures has a direct effect on the ultimate validity and ease of access to the data base. A coordinate indexing system at its best is inherently difficult to manipulate; when that system obviously needs tuning, the searchers encounter rough going."*

In addition to the specific faults of the thesaurus which he pointed out to Mason, Hoover noted two other developments which encouraged him to establish a high priority for vocabulary clean-up. ERIC managers had been considering the establishment of one or two new data bases. Once established, any new data base would receive a significant initial influx of documents. Also, new terms. Better to add them to solid hierarchies, logical synonyms, and contemporary terminology. Secondly, OE was receiving legislative mandates to create various types of new "clearinghouses," such as in the areas of womens' equity and bilingual education, which would exist outside the ERIC system, but which would be involved in their own indexing activities. Unquestionably these clearinghouses would use the ERIC thesaurus. Hoover felt the pressure growing.

What was the estimated price tag for this work? Hoover estimated it would take about $150,000 per year. Some money had to go to each clearinghouse because the speed-up activities would require the services of at least a half-time lexicographer-indexer. Maybe even a full-time person. Some portion of that sum would have to go to the Facility for additional lexicographic effort. [29] This vocabulary improvement package was not subsequently included in the FY 1978 "Wish List"; rather, it because an additional allotment to the Facility, and each clearinghouse received some additional money as its contract came up for renewal.

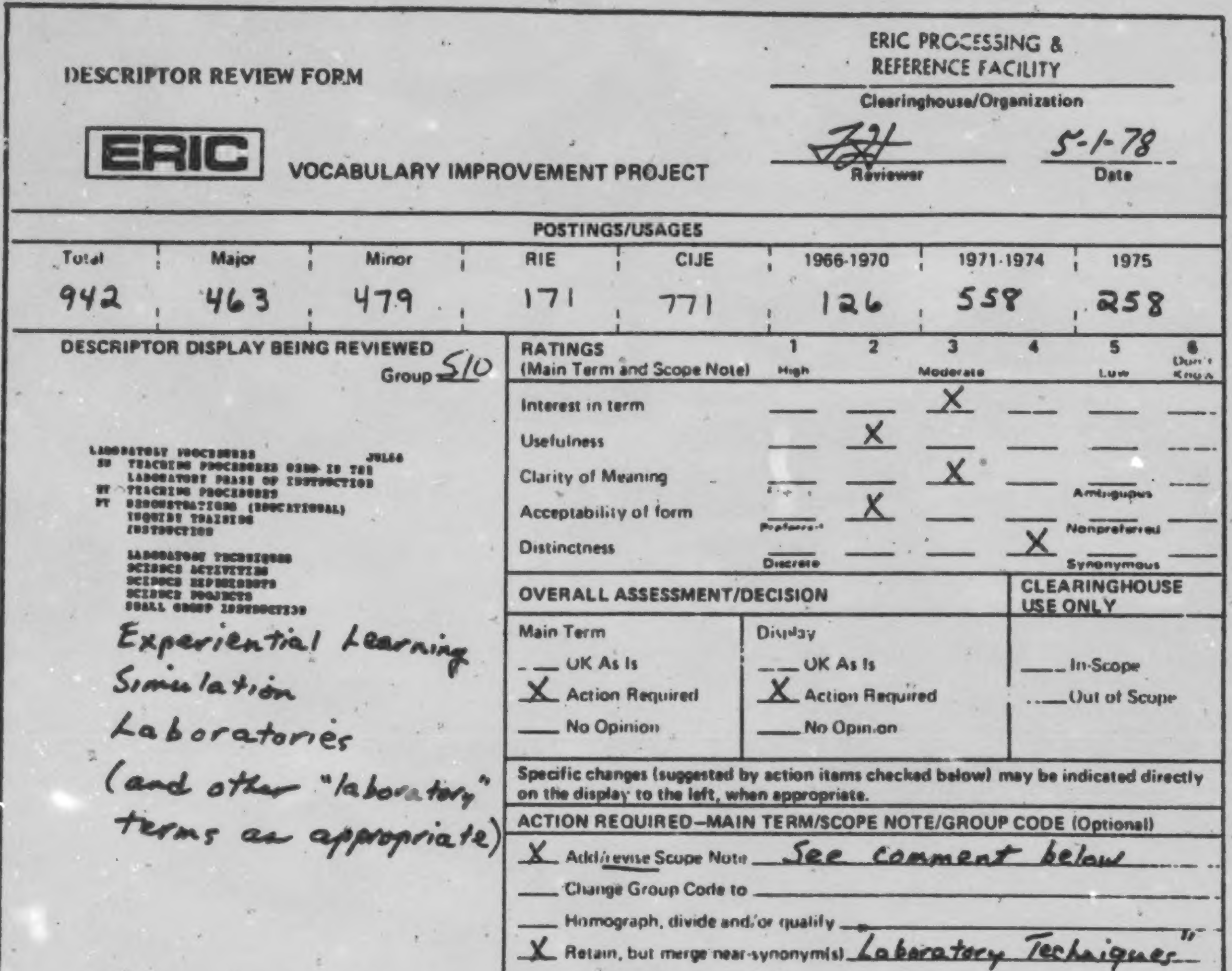
During the early summer of 1977, the accelerated Vocabulary Improvement Program (VIP) became operational. Even though it was somewhat anticipatory of actual budget allocations, it could always have been interrupted if the budget did not work out as planned. One significant detail had yet to be worked out: who was going to have primary project responsibility? Houston had suggested that the clearinghouse vocabulary coordinators elect a project coordinator, perhaps on a rotating basis. But once a decision had been reached to proceed, the planning of events proceeded quickly: Central ERIC people, for example, wanted to schedule a general meeting of the clearinghouse VIP representatives in Washington during September. With such a meeting establishing the groundwork, additional work could be accomplished during the regional technical meetings scheduled for the latter part of 1977. Therefore, Hoover selected Barbara Booth, of the Junior College clearinghouse, as project coordinator. She had done an excellent piece of work during her participation in the Identifier clean-up program and Ted Brandhorst, head of the ERIC Facility, had brought this fact to the attention of Hoover.

Inauguration of the VIP took place at a meeting of all clearinghouse vocabulary coordinators in Washington, D.C. on September 20-21. Then came three more meetings, in quick succession, as parts of the regional technical meetings, in Columbus, Ohio; Reston, Virginia; and Las Cruces, New Mexico. All of these meetings were intense, all of them studiously reflective and analytical, all of them desperately seeking the best ways and means to come up with establishing the most effective and least costly procedures which could accomplish improvements of the thesaurus in the most reasonable period of time. A large portion of these meetings was consumed in creating, modifying, and testing a Descriptor Review Form which was to be used for an examination of every term in the thesaurus. See Figure 20.

By the beginning of 1978, the VIP meetings had produced an overall plan for thesaurus modification. The spirit and conceptual design of the project held that nothing in the vocabulary was sacrosanct: any descriptor could be changed, merged, or deleted; hierarchical structures could be revised or abolished; and scope notes could be deleted, added, or changed. Hopefully, these no-holds-barred tactics would eliminate problems in conceptual relationships, reduce existing ambiguities, and discard obsolete terminology. The project was divided into three principal segments:

- Phase I, Thesaurus Review, February-August 1978

  Each clearinghouse received from the Facility over 5,000 Descriptor Review Forms, each of which showed one single term in its proper hierarchical placement, just as it appeared in the thesaurus. The work form asked the reviewer to respond with a term rating, an overall assessmemt, and an opinion of what action was required. Obviously, because of different clearinghouse attitudes or interests, these comments varied from clearinghouse to clearinghouse. In addition, Booth made arrangements to send some of the forms (or all of them, in some cases) to several user organizations which had volunteered to participate.



DESCRIPTOR REVIEW FORM

ERIC VOCABULARY IMPROVEMENT PROJECT

ERIC PROCESSING & REFERENCE FACILITY
Clearinghouse/Organization

Reviewer: TJH
Date: 5-1-78

POSTINGS/USAGES

Total	Major	Minor	RIE	CIJE	1966-1970	1971-1974	1975
942	463	479	171	771	126	558	258

DESCRIPTOR DISPLAY BEING REVIEWED
Group 510

```
LABORATORY PROCEDURES                      JUL66
 SN   TEACHING PROCEDURES USED IN THE
      LABORATORY PHASE OF INSTRUCTION
 BT   TEACHING PROCEDURES
 RT   DEMONSTRATIONS (EDUCATIONAL)
      INQUIRY TRAINING
      INSTRUCTION

      LABORATORY TECHNIQUES
      SCIENCE ACTIVITIES
      SCIENCE EXPERIMENTS
      SCIENCE PROJECTS
      SMALL GROUP INSTRUCTION
```

Experiential Learning
Simulation
Laboratories
(and other "laboratory" terms as appropriate)

RATINGS (Main Term and Scope Note)

	1 High	2	3 Moderate	4	5 Low	6 Don't Know
Interest in term			X			
Usefulness		X				
Clarity of Meaning	Precise		X		Ambiguous	
Acceptability of form	Preferred	X			Nonpreferred	
Distinctness	Discrete			X	Synonymous	

OVERALL ASSESSMENT/DECISION

Main Term
___ OK As Is
X Action Required
___ No Opinion

Display
___ OK As Is
X Action Required
___ No Opinion

CLEARINGHOUSE USE ONLY
___ In-Scope
___ Out of Scope

Specific changes (suggested by action items checked below) may be indicated directly on the display to the left, when appropriate.

ACTION REQUIRED—MAIN TERM/SCOPE NOTE/GROUP CODE (Optional)

X Add/revise Scope Note See comment below
___ Change Group Code to
___ Homograph, divide and/or qualify
X Retain, but merge near-synonym(s) Laboratory Techniques"
___ Delete, transfer to new term
___ Delete, merge with existing term (SYN) (BT) (RT)
___ Delete, transfer to Identifier field
___ Delete (only)
___ Other (specify below)

ACTION REQUIRED—DISPLAY (Optional)

___ Add/delete/NT(s)
X Add/delete/BT(s) Add "Methods"; Delete "Teaching Procedures"
X Add/delete/RT(s) See Display
___ Add/delete/UF(s)
___ Other (specify below)

ADDITIONAL COMMENTS (e.g., special meanings within sub-disciplines, relationships with other terms). Continue on back if necessary:

Little difference between the ways "lab procedures" & "lab techniques" are used in indexing. Recommend deleting latter term. With a merge, above Scope Note should be changed to something very general or deleted entirely.

Form No. EFF 54 (12/77)

FIGURE 20: DESCRIPTOR REVIEW FORM

- Phase II, Interim Procedures, August-December 1978

  All forms were returned to the ERIC Facility where they were sorted into separate groups, term by term. Then, in a working session, held in Columbia, Maryland, the Executive Committee of the VIP decided which stacks of terms should be sent to which clearinghouse for final decision.* This decision, of course, was based largely on the scope of interest for each clearinghouse; however, various other intuitive and special knowledge factors also entered the picture.

- Phase III, Recommended Actions, January-December 1979

  Each clearinghouse received approximately 300 stacks of terms, each stack containing about 16 forms containing individual comments from clearinghouses and users. It was then the clearinghouse coordinator's job to examine the comments on each term, consider actual usage in indexing and retrieval, and accomplish any necessary further research in thesauri or dictionaries. The next and final step was to prepare DJF or TCN forms and send them to the Facility for final editing and entry into the thesaurus. Before final printing, however, the clearinghouses would also be involved in a final draft review of the thesaurus. 30

The above steps were not complicated; in fact, they appeared relatively simple as a project concept. However, one could only appreciate the tremendous amount of workload and mental gymnastics involved in the effort upon examination of *one* form and realization of all the thought and effort that had to go into *each* decision on *each* term. And there were more than 5,000 terms. These complications could best be understood by examining the "VIP Manual", which contained the guidelines and procedures for vocabulary improvement. Project coordinator Booth prepared this manual in December 1978 to provide guidance for the clearinghouse coordinators in making their final recommendations on each term. This *tour de force* of vocabulary philosophy, thesaurus principles, and step-by-step procedures was an outstanding piece of work. A major contribution to the entire thesaurus improvement effort.**

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*Membership of the Executive Committee consisted of: Barbara Booth, Clearinghouse for Junior Colleges; Pauline Atherton, Clearinghouse in Information Resources; Eleanor Horne, Clearinghouse on Tests, Measurement, and Evaluation; James Houston, ERIC Facility; and Delmer Trester, Central ERIC.

**Barbara Booth's tenure as VIP coordinator ended on May 31, 1979, when she accepted a position outside of the ERIC system. Her replacement was Lynn Haupt, of the ERIC Clearinghouse on Higher Education.

It was the complicated nature of the project which began to worry Hoover and Chesley. For they feared the VIP executive group was going too far toward the achievement of perfection. This concern on their part became more real when the executive committee entertained the thought of putting the entire vocabulary in an online mode so that the clearinghouse coordinators could perform experiments with hierarchies and examine computer searching techniques before making final term recommendations. Hoover and Chesley, therefore, began a series of discussions with the VIP group which stressed the importance of bringing the project to completion and publication of the new edition within a reasonable length of time. Therefore, the VIP executive group settled for a periodic printout of terms and recommendations, based on the existing master thesaurus tape. This was affectionately referred to as the *Play Thesaurus*. It contained all suggested additions and changes to the thesaurus file, and was updated in three-week cycles and distributed to the clearinghouses for comment.*

According to the Hoover-Chesley timetable, a complete working copy of the thesaurus was to be available in December 1979. Following final review, the publication of the 8th edition would be accomplished in early 1980.[31]

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*A description of the Vocabulary Improvement Program is contained in an article by Barbara Booth entitled "A 'New' ERIC Thesaurus, Fine-Tuned for Searching". *Online*, Vol. 3, No. 3, June 1979.

CHAPTER VIII. PROCESSING EDUCATIONAL INFORMATION

Clearinghouse Management

The decentralized ERIC system, which earmarked approximately three-fourths of all funding resources for the clearinghouses, placed a large burden of responsibility on the clearinghouse directors. It was they who bore primary responsibility for all the basic elements of system operation:

- the acquisition and selection of documents;
- the indexing and abstracting of documents and journal articles for RIE and CIJE,
- the arrangements for the writing and publication of information analysis products;
- the establishment of procedures for answering questions;
- the conduct of various types of workshops, and
- the handling of publicity and public relations.

Clearinghouse directors had to be subject specialists, information system authorities, budget experts, personnel managers, institutional representatives, and ERIC publicists.

What were the actual background requirements for directors which Central ERIC asked for in the RFP? They were very general: a person "nationally recognized" or "highly qualified" in the subject area of that particular clearinghouse which was up for bidding. More stringent requirements were probably established by the host institution. ERIC did not require a Ph.D. degree. But, of the 35 or 40 people who have served as directors through the years since 1966, only two did not have a Ph.D. (One became a director with an M.A. and then received his Ph.D. while he was a director.) Yet unquestionably, all of them were well established as experts in their chosen field of education; in fact, several directors could be described accurately as national and even world-wide authorities.

Some directors came to their ERIC affiliation with little or mediocre knowledge about information systems. This was not a serious handicap, particularly when their assistant or associate directors were qualified to fill that gap initially. Almost invariably, however, the directors found that once they became associated with ERIC they discovered it an interesting activity and the learning process not burdensome. In fact, most of them found the ERIC environment fascinating, quickly learned the intricacies of ERIC and other information systems, and became knowledgeable, competent, and innovative. As a group, therefore, they have been dedicated and intensely interested in the welfare, promotion, and destiny of ERIC.

Since 1966 the turnover rate of directors could probably be generalized as average. As indicated in the preceding pages, Central ERIC certainly played a large part in this turnover rate with its requirement for competition and the transfer of clearinghouses from one sponsoring organization to another. By the middle of 1979, only two directors remained from the dozen clearinghouses which were in existence as of June 1966. These two were Cohen, from Junior Colleges, and Walz from Counseling and Personnel Services. Another director, O'Donnell, has had an uninterrupted service since the second wave of competitions in 1967. His clearinghouse, Reading and Communication Skills was a combination of two clearinghouses. Yet, as one looked at the 1979 roster of directors, one recognized seven or eight who had a substantial longevity of seven, eight, or nine years. All in all, it was a fairly stable situation.

As constituted in 1979——and reflecting a situation which was true throughout the history of ERIC——the host institutions were almost invariably universities and professional associations. The 1979 set-up consisted of 10 universities, 5 professional associations, and 1 which did not fit precisely into either of those two categories. The latter was the Educational Testing Services, the host institution for the Clearinghouse on Tests, Measurement, and Evaluation. This organization classified itself as a "private, non-profit corporation." No commercial organization, or any non-profit activity of any commercial organization, was ever successful in bidding for a clearinghouse——even though several of them did enter the competitions.

The relationship between Central ERIC personnel and host institution personnel was never on a continuously close basis——simply because it did not need to be. Most of the contact was confined to a brief discussion with host institution people during a site visit. A courtesy call. However, there were at least three categories of situations when such discussions did take place.

- First, there were a few occasions when there was some question raised about who should succeed a resigning director. The clearinghouse's contract with ERIC stipulated that ERIC had the option to approve the new appointee. In practically every situation this was a rubber-stamp approval; in a few, however, it was not and the situation called for a discussion and a meeting of the minds.

- Secondly, there were some instances where the host institution could not provide what Central ERIC officials considered adequate space——either in size or quality——for the clearinghouse operation. This also was a contractual matter which sometimes led to discussion and negotiation.

- Thirdly, it was necessary when ERIC decided to eliminate (or combine) a clearinghouse. This almost always resulted in conferences with representatives from the host institution as well as members of the appropriate professional associations.

Throughout the years of ERIC's history, most of the directors devoted only a portion of their time to ERIC duties. There was no clear pattern of time percentage; it was an individual arrangement with the host institution. Generally speaking, the Central ERIC monitors thought that a director should budget a minimum of 20-25 percent of available time to ERIC. Anything less appeared to be more of a figurehead situation than a genuine participation in the program. The exact percentage of a director's time devoted to ERIC depended on many circumstances, some of them variable from year to year. These might include the overall budget, the individual's personal interest in teaching or other activities, the capability of the assistant or associate director, the number of subject areas a clearinghouse had to handle, and other similar circumstances, all directly or indirectly affecting the percentage of director's time allocated to ERIC. To a lesser degree this was also true of the assistant and associate directors. However, more of these people were full-time or at least were obligated for a greater portion of time than the directors.

Generally speaking, the assistant positions were responsible for the day-to-day operation of clearinghouses and thus their actual on-site presence was required during a greater portion of the average working day.

Because clearinghouse responsibilities, workloads, and budgets varied rather widely, the size of the staffs also varied considerably. For example, according to the system's directory for April 1979, clearinghouses averaged 14 employees each, with the greatest number being 21, the smallest 9. But those statistics were misleading because the clearinghouse operations were replete with part-time employees, and the number varied constantly. Getting a fix on the exact number of "full-time equivalents" was an exercise in futility and, probably, at no time precisely correct. A good educated guess was 10 or 11. The positions, with many people holding dual roles, included: director, assistant director, associate director, clerical, acquisition clerk, indexer, abstractor, librarian, editor, user services specialist, writer, research associate, and a substantial number of other titles which happened to fit into the host institution's peculiar job descriptions and pay scales.

Both Central ERIC management and clearinghouse management were aware of beneficial phenomena peculiar to the ERIC system. For some undefinable, subtle, inexplicable reason, there was an unusual degree of dedication, interest, and loyalty among all people, governmental and contractual, who worked in the ERIC system. This attitude was obvious, for example, at technical meetings, site visits, and even informal gatherings. For a very high percentage of the people in ERIC, their association was more than just a job; they were loyal to their clearinghouse, competitive in the quality of their work, and intensely interested in solving system problems or overcoming obstacles in their clearinghouses. Many of the clearinghouse staff members donated large portions of their personal time, without specific compensation, so as to meet a deadline, improve a piece of work, perform an added service for a visiting user, or indulge in similar dedicated activities. Because this spirit was clearly discernible, and because it was persistent throughout the ERIC system, it was obvious that most people found the ERIC environment an exciting and interesting place to be.

Advisory Boards

As part of the contractual obligation, every clearinghouse had an advisory board. According to the "Policy Manual", the purpose of such a group was *"...to provide professional subject area guidance and counsel on the direction of Clearinghouse programs, scope, document selection criteria, information analysis topics, and matters concerning dissemination of educational information"*[1]. It was expected that the size of the advisory boards would not be fewer than 6 or more than 12. Membership usually included one or two people from the host institution, plus representatives from professional associations, the research and development community, schools, information and dissemination organizations, and the like. Almost as soon as Hoover became the head of ERIC, he became aware of the almost total absence of practicing teachers on the boards, and made this fact known to the directors. Thus, practicing teachers became a standard category or representation.

Again, as was true for many operations in the decentralized system, clearinghouses varied their strategy in seeking advice. Some of them, in addition to the "national" advisory boards, established a small coterie of nearby experts with whom they could consult on a more regular basis (the so-called "local" advisory boards).

Although the advisory groups did touch on a variety of clearinghouse activities, their greatest value, perhaps, lay in their contributions to the information analysis program. Typically, the procedure worked as follows: the clearinghouse director, perhaps after carefully watching the year's publications and having conversations with peers, would draw up a list of 25 or 30 possible subjects for information analysis treatment. Perhaps the director would even list a few possible prospective authors, and then present this list to the board members and ask them to rank the subjects in priority order and, when possible, indicate possible authors. After each board member had gone through the list, the director would throw the list open for discussion, debate, and horsetrading of ideas. In this way the director achieved a fairly representative list of subject and possible authors. During the next couple of months following the meeting, the director would contact the suggested authors, try to get them committed, and then offer the list to Central ERIC in next year's proposal.

There were one or two drawbacks to the advisory boards. Many of the members were extremely capable people, many of them administrators themselves, many of them very action-oriented. On occasion, therefore, they attempted to commit the clearinghouse director to actions or courses which were contrary to (or at least at variance with) established ERIC procedures, policies, or guidelines. Usually these situations were quickly worked out in a discussion between the director and Central ERIC. But they put the clearinghouse director in an unenviable position. Also, because of the desire to rotate advisory board membership and infuse the meetings with new academic blood, there were frequently new members who knew very little about the ERIC system. So there was a constant director responsibility for indoctrination. And ERIC was not a story which could be told in a few words. But these were minor matters.

An important factor when considering advisory boards was the price tag: many of the clearinghouse budgets in the late seventies were beginning to require $5,000 to $6,000 per year for the activity. During 1978 the subject of advisory boards was debated among the Central ERIC staff. Were the boards too costly, considering their actual accomplishments? In the end, Hoover and his staff decided that they could not be measured in precise terms of dollars and cents. The intangible benefits, the contacts, the association with experts in the field were all benefits too valuable to dismiss.

All in all, the advisory boards have made significant contributions to ERIC, although those contributions are sometimes difficult to pinpoint, to measure, or to discuss in concrete terms. The directors, more than anyone, appreciated the advice and assistance. The boards served as a reinforcement mechanism for the directors' purposes and kept them from becoming isolated from the large constituencies of their educational subject areas. There is nothing as important as an idea; nothing as valuable as good advice; nothing as comforting as agreement with a decision.

Technical Directions

If Burchinal, Haswell, and other Central ERIC officials fully comprehended the vast number of technical and operational details that would be involved in the ERIC system, they might have had many second thoughts about establishing ERIC as a decentralized activity. The basic philosophical concept about decentralization was correct: the pockets of subject expertise in education lay scattered around the country and they could not be collected under one roof in Washington. But what they did not realize completely was the difficulty in standardizing operational details. For instead of having one authority on acquisitions, or selection, or indexing, or abstracting, there had to be such an authority in every clearinghouse.

Almost immediately Central ERIC managers saw the need for training sessions. Thus, soon after system formation in October 1966, and again in May 1967, Central ERIC held training meetings, each a week long, to hold detailed discussions about the basic ERIC operations. Later, North American representatives visited each clearinghouse in order to bring them up to speed in their indexing and abstracting operations. Also, North American and Central ERIC started to write and publish the ERIC operating procedures, which became the *ERIC Processing Manual*. Then came the procedures of site visits, annual review sessions, directors' meetings, publication of "ERIC Management Notes", and special instructional letters. All of these were not enough. A need still existed for continuing overview of technical procedures. This was part of the background for the so-called "annual technical meetings," which began in 1969. Their occurrence depended on many factors, but they were considered to be annual affairs. For the record, the following schedule is a list of all regularly scheduled technical meetings:

YEAR	DATE	LOCATION
1969	June 23-25	Washington, D.C. area: Bethesda, Maryland - EDRS Arlington, Virginia - ERIC Facility Washington, D.C. - NEA Headquarters
1970		Meeting scheduled for September, but cancelled due to budget limitations.
1971	April 28-29	Ann Arbor, Michigan Hilton Inn
1972	November 13-15	Boulder, Colorado Clearinghouse on Social Studies/ Social Science Education
1973	October 9-10	Columbus, Ohio Stouffers University Inn
1974	December 17-19	Columbia, Maryland Urban Life Center
1975		None scheduled
1976	April 5-7	Annapolis, Maryland Hilton Inn
1977	June 24	Arlington, Virginia Sheraton National Hotel
1978	April 25-27	Harpers Ferry, West Virginia Hilltop House
1979	May 1-3	College Park, Maryland Adult Education Center

But even this frequency level was not considered adequate. Discussions between ERIC monitors and clearinghouse staff members revealed that there was one question: perhaps some of the sessions should be more informal, and if the cost for more national meetings was too great, why not regional meetings of some kind? As a result, beginning in 1976, ERIC began an annual round of regional meetings held in the east, midwest, and far west. These meetings rotated from clearinghouse to clearinghouse, and were particularly valuable in allowing a greater number of people to attend. The very first regional meeting took place September 21-23, 1976 in Urbana, Illinois. The sessions were held at the Clearinghouse on Early Childhood Education and the Clearinghouse on Reading and Communication Skills.

What was accomplished at the technical meetings? A mere recitation of agenda items did not reveal the worthwhileness of the meetings. The overall general topics remained almost static: acquisitions, selection, abstracting, indexing, cataloging, thesaurus procedures, user services, workshop techniques, standing order customer relations, along with status reports and system news from Central ERIC, the ERIC Facility, EDRS, and the CIJE contractor. But there were so many facets to each of these categories of work, so many details, so many associated difficulties and problems, all needing to be aired, debated, resolved. All needing common understanding. Each subject had to be attacked from many different angles. Thus there were agenda items such as:

- "ERIC Abstracts——What Do Users Think?"
- "Marketing ERIC Products and Services"
- "Indicative/Informative Abstracts——A Working Session"
- "Other Data Bases: How They Do What We Do"

Almost always, the agendas provided several hours' opportunity for free-wheeling working sessions so that each clearinghouse representative could discuss operational procedures with a person who did similar work at another clearinghouse.

The atmosphere of the national technical meetings, and later the regional meetings, became more and more productive with each passing year. The regional meetings, the most informal of all, provided an opportunity for the host clearinghouse personnel to hold cocktail parties, buffet dinners, casual lunches, all of which contributed to an acquaintance of personalities and understanding of viewpoints.

The technical meetings were very popular among system personnel. The meetings were always intense with discussions, the agendas filled with interesting and germane subjects, and all participants seriously interested in the proceedings. The meetings, in very large measure, helped to bridge the gaps inherent in a decentralized information system.

Many ideas for modifications and improvements in technical procedures came out of the technical meetings. One such suggestion, having its origin at the 1976 meeting in Annapolis, was the formation of a "Steering Committee for ERIC System Technical Operations." Shortly after that meeting, Hoover sent a letter to all clearinghouses asking for nominations to committee membership. He explained that the purpose of the committee was to consider *"...any and all areas for possible improvements in the technical aspects of operations, such as:*

1. *Training materials*
2. *Provision for searcher and liaison experience*
3. *Review of abstracting and indexing format and methodologies*
4. *Creation of ERIC tools or modification of existing tools*
5. *Initiation of agendas and format for ERIC technical meetings."* [2]

The selected members of the first steering committee were:

NAME	CLEARINGHOUSE
Kathleen McLane, Chairperson	Languages and Linguistics
John Waters	Teacher Education
Jean Barabas	Urban Education
Barbara Booth	Junior Colleges
Jock Embry	ERIC Facility

The committee's role was advisory, i.e., to collect ideas from among the clearinghouses, to come up with ideas extemporaneously in their meetings, and send all ideas, along with their recommendations, to Central ERIC for perusal, consideration, and possible implementation.

These ideas were many in number and of various types. For example, the committee recommended that clearinghouses could benefit greatly from an abstracting and indexing workbook. The *ERIC Processing Manual* simply could not go into enough detail in its list of procedures and rules to constitute a handy working tool for the multifaceted indexing and abstracting activities. The Steering Committee looked around for volunteers and found three:

NAME	CLEARINGHOUSE
Barbara Booth	Junior Colleges (also a Steering Committee member)
Betty Rose Rios	Rural Education and Small Schools
Sydney Meredith	Social Studies/ Social Science Education

These three people met in Meredith's clearinghouse in Boulder, Colorado and after a nonstop, week-long working session, same up with a draft of the workbook. This was sent to all clearinghouses for comment and the final version was planned for the summer or fall of 1979.

Several other substantive activities which the Steering Committee promoted (all of which were in hand during mid-1979) were as follows:

1. A study of the characteristics and desirability of "mixed" abstracts, that is, abstracts which contained both the informative and indicative styles of writing. The possibility was the adoption of the so-called "infordicative" abstract.

2. A study to develop criteria for coding RIE citations which were no longer of current interest.

3. The preparation of "age leveling terms" for indexing docments. This was somewhat parallel to, but specifically different from,"grade-leveling terms."

4. The preparation of a standardized "transfer of document" form to be used when one clearinghouse acquired a document which lay in the scope of another clearinghouse. The form would convey standard information needed at the receiving clearinghouse which kept the document for entry into the data base.

5. The Steering Committee was asked to arrange for a critical review of the publication "Online Searching of ERIC", which was being published at the Clearinghouse on Information Resources. [3]

The Steering Committee, in 1979, appeared to be a valuable adjunct to all technical activities for the ERIC system. Its membership was rotated; in 1978 it elected a new chairperson, John Waters, of the Clearinghouse on Teacher Education, and other clearinghouse people became committee members. All members of the ERIC system were aware of its progress and considered it an excellent addition to the system structure of ERIC.

Acquisitions for RIE

Anyone familiar with the subject of ERIC acquisitions activities would be tempted to say that nothing could be more frustrating, that it must be far easier to be an acquisitions librarian at a university library or a city library. In libraries you need merely to browse through "Books in Print" and order from publishers or set up a contract with a periodical broker and send the broker a list of journals you want. Then all that remains is to write a check for the bill. Of course, those acquisition librarians have their headaches too. Books go out of print as the orders are placed, publishers go out of business, journals arrive late, or not at all, and there's always the influential user, the head of a college department of a city official, who absolutely needs the book no later than tomorrow, and many other frustrations.

But the acquisition frustration level frequently runs amuck in an information system such as ERIC, for a very large part of the data base, from the very beginning of ERIC, was tagged with the nomenclature "fugitive literature". Frequently the ERIC acquisition people appeared to cast themselves in the role of a one-man posse, a member of a vigilant committee, or sometimes that of a lone bounty hunter, trying to track down the publication trail of some elusive document. The usually unemotional *ERIC Processing Manual* even recognized the special qualities necessary for an acquisition specialist: *"The acquisition librarian or specialist must be stubborn, problem-solving, far-sighted, creative, and whatever else is necessary, to ensure a steady flow of potentially valuable documents".*

Central ERIC struggled with the concept of acquisitions for many years before finding a workable solution. The Clearinghouse of Studies on Higher Education, ERIC's predecessor, had secured most of its document from two sources: the Office of Education itself, and through letters to the presidents of colleges and universities. Under the expanded documentary interests of ERIC, the principal sources, other than OE, were certain, rather well known, depositories of documents at various universities, some of which were mentioned earlier, such as Yeshiva University, Harvard University, The University of Southern California, Adams State College, the Southern Reporting Service, and later on several others which also did indexing and abstracting work under contract.

Once the clearinghouses were established, in mid-1966, they became responsible for a large share of the acquisitions effort. The original RFP made this clear:

> *"A vigorous acquisitions program must be established in order to locate significant current research and research related materials. Unpublished documents, reports, papers, and other communications should be sought by checking on new research projects, spotting conferences, seminars, and workshops planned in order that contributors may be contacted for reprints or other reports. Direct correspondence or personal contacts must be made with individuals or institutions thought to be doing work relevant to the center mission."* The RFP went on to say that *"Book material normally acquired by libraries is not to be processed into the ERIC system"*, and that the *"Input of periodical literature is to be on a vary limited basis...the number of periodical items normally selected is not to exceed approximately one-third of the total input."*

This latter statement, of course, preceded the publication of CIJE. The clearinghouses were advised that they were not responsible for the acquisition of OE-sponsored research reports. That was reserved for Central ERIC.[5]

Theoretically, with OE to be covered by Central ERIC personnel and the individuals and institutions by the clearinghouses, most of the research document sources were covered. But this was not quite the case. What about the states? Burchinal recognized that indeed there were a number of state education agencies which were engaged in educational research, some of them rather heavily. He did not have enough manpower in Central ERIC to handle acquisitions from the states and he felt that if the clearinghouses got into this picture it would be a rather messy situation for each one to contact each state agency for specific subject areas. The solution was to find some outside activity to handle the entire effort. So he awarded a small contract to the University of the State of New York, specifically Norman D. Kurland, Director of the Center of Innovation, for the acquisition of state-generated research reports. This was the so-called "EDSEP Project" (ERIC Documentation of State Education Publications).

Kurland and his associate, Shirley Sargent, maintained this contract for two years, mid-1966 to mid-1968, and were responsible for adding a significant number of documents to the ERIC collection. In mid-1968 the contract was shifted to the Oregon State System of Higher Education, with Allen Lee as project director. In addition to acquiring documents, Lee began discussions with state representatives aimed at having states set up models of information systems for the dissemination of educational information.[6] This latter effort, however, resulted in only preliminary efforts which Burchinal and Clemens later implemented on a much larger scale.

During the five-year period from 1966 to 1971, the acquisition effort in Central ERIC shifted from hand to hand; seldom did it receive the undivided attention of anyone. Priorities shifted, responsibilities changed, and several people moved in and out of the function. Papier, Missar, Bryars, Smardak, and Trester, at one time or another, became involved in acquisition operations. Furthermore, acquisitions became more complex, for almost immediately Central ERIC began to approve the collection of not only research and research-related materials, but also educational documents of many kinds. Obviously, this considerably changed the acquisition concept; not only was OE a source for documents, but every federal agency which was somehow involved with education became a source. And there were many of them. A 1968 ERIC staff study of acquisitions revealed that a total of 38 federal agencies or federal activities were involved with educational programs. And because of the way that responsibilities were scattered in those agencies, more than 110 separate contacts were necessary to cover the entire documentary scene. One of the early arrangements made was with the Defense Documentation Center. Central ERIC asked the clearinghouses to prepare profiles (lists of descriptors) by which the Documentation Center could do a computer scan of its files and send microfiche copies of documents to the clearinghouses.

In addition to federal agencies, Central ERIC assumed responsibility for acquisitions from a few other special organizations, such as the Phi Delta Kappa School Research Information Service, the National Education Association, the Board of Education of the City of New York, and the American Educational Textbook Publishers, as well as a quasi-governmental activity, the Science Information Exchange.

Oddly enough one of the most difficult areas for acquisitions was OE itself. There were nine principal bureaus or offices, and a host of divisions and branches, all of which had separate little empires of contracts which netted final reports of the type ERIC wanted. And even though Central ERIC managed to have OE Commissioner Howe sign a directive which required offices to send documents to ERIC, the actual flow of documents was always sporadic. In fact, Bryars, who personally knew many of the key personnel responsible for the documents, had to spend a considerable portion of his time tracking down specific documents which he knew were available, but found difficult to lay his hands on. Frequently the OE situation became frustrating for clearinghouse acquisition people, for sometimes they would learn about OE-sponsored research documents, but Central ERIC had enjoined them not to contact OE offices themselves. As a result of Bryars' constant badgering and some bona fide help from conscientious OE people, ERIC was successful in acquiring a large percentage of the OE-sponsored reports. Yet this acquisition problem area never reached a totally satisfactory solution.

Did the clearinghouses have equal difficulty with their acquisition programs? Yes and no. Some clearinghouses, because of their association with parent or related organizations, found document acquisitions to be a relatively natural, uncomplicated, and inexpensive procedure. Also, some subject areas were easier to control. But most clearinghouses had to expend a considerable amount of spadework, shovelful by shovelful, to unearth worthwhile documentary paydirt. Although difficult to prove statistically, as the clearinghouses gained experience their acquisition efforts improved. They became aware of the steady sources of documents and cemented those contacts with letters of acquisition agreements; they became knowledgeable about all of the document announcement publications and thus were able to contact individuals or organizations for specific items; and they became more sophisticated in calling for documents at annual meetings. In fact, one clearinghouse (Tests, Measurement, and Evaluation) voluntarily collected all available papers at the annual meeting of the Educational Research Association and arranged for their transfer to individual clearinghouses according to their subject scopes.

Also, to some undefinable extent, the clearinghouses benefited from ERIC's growing reputation. In almost every outside contact, whether through personal appearance or through the medium of printed brochures or other various announcement mechanisms, the public was invited to send their documents to ERIC. So both Central ERIC and the clearinghouses received a substantial number of "unsolicited" documents, that is, individual documents not specifically asked for. It was amusing to note that on some occasions this procedure misfired. Some authors did not understand the selection process and were disappointed when their documents did not appear in RIE. They demanded an explanation.

One of the best acquisition decisions Central ERIC made was in May 1971 when it transferred most of the Central ERIC acquisition function to the ERIC Facility. The Facility assigned this task to Murray Howder, whose acquisition skills and industry combined to build up a very active and successful program of contacting federal agencies, and later on some international and other organizations, in order to establish formalized acquisition deals with them. Through telephone calls, visits, or exchanges of letters, Howder negotiated what he termed "EFAA's" (ERIC Facility Acquisition Arrangements). By the middle of 1979, along with Grace Sundstrom, who succeeded him, Howder had drawn up about 200 such arrangements, of which about 160 continued to be active. These, combined with similar formalized efforts on the part of the clearinghouses resulted in a grand total of about 690 agreements——an imposing total.[8]

One of the acquisition problems for the ERIC system was what to do about foreign documents. This matter was finally resolved through a process of study and recommendation by a committee of the directors, which was then accepted by Central ERIC. Depending on the specific situation, the acquiring of foreign documents is regarded as a matter of cooperation between a clearinghouse and the Facility (for the Facility might already have an acquisition arrangement which covers the document source). However, selecting the document for RIE remained, as always, a clearinghouse function. All documents not in English should be accompanied with a 1,000 to 1,500 word English abstract prepared by the activity which published the document. Exceptions to this requirement could be made when the potential users of the document were expected to be familiar with the language. This latter condition would be

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*The *ERIC Processing Manual* contains a detailed chapter on acquisition sources, techniques, and procedures.

particularly true for documents handled by the Language and Linguistics clearinghouse. Although these guidelines sound innocuous enough, they probably will result in a greater number of foreign documents being placed in the data base.

Any observer of the ERIC system during the period 1966-1979 would have to compliment the system on the development of a strong and effective acquisition system. Because of the decentralized system characteristic and because of the fugitive nature of the data base, it was vital to develop a good acquisition program. And ERIC did.

Selection for RIE

"Garbage in, garbage out". Any member of the ERIC system cringed whenever he or she heard that statement. Why? Because that charge, in one form or another, was leveled at the ERIC data base on several occasions, sometimes quite seriously. The general reaction of ERIC personnel has been that such critics did not understand the purpose of ERIC or how it operated. The content, the quality, the usefulness of the data base depends to a large extent on the methodologies and user orientations employed in choosing the items that go into it. In library or information system terminology, this is classically known as "selection". To understand the basis for charges of lack of quality, therefore, one should understand how the system guidelines for this activity operated.

First of all, one could assume some small criteria of quality was already built into the acquisition process. But that was actually very small. For example, for a considerably period of time all Bureau of Research reports entered the system, regardless of quality. Also, the ERIC Facility, with its many acquisition arrangements, did not enter into the assignment of quality control. The documents coming to the Facility were sorted out by clearinghouse scope notes and dispatched to the appropriate clearinghouse. The clearinghouses exercised some degree of quality in ordering documents they saw listed in professional journals, article footnotes, newsletters, etc. Yet determining quality prior to actually seeing the document was very difficult. Few people were gifted with that kind of prescience. So, in summary, there could be relatively little quality criteria in the acquisition process. Some, but not much.

Welsh, of Central ERIC, and Howder, of the ERIC Facility, spent several laborious weeks during the summer of 1973 to arrive at acceptable categorical document types and quality guidelines which subsequently appeared in the *ERIC Processing Manual*.

They were somewhat detailed, but important. First of all, there were three general categories of "types of documents" which were eligible for acceptance into RIE (see Figure 21).

Ph.D. dissertations and master's theses presented somewhat of a singular category for selection. The majority of dissertations in the United States had been, for a long time, controlled and announced by University Microfilms' *Dissertations Abstracts*. However, not every Ph.D. granting institution automatically sent dissertations to University Microfilms. And masters' theses going to University Microfilms were relatively few in number. Therefore, there were a fairly large number of dissertations and theses which were "uncontrolled" and became very likely candidates for RIE. But the guidelines in the *ERIC Processing Manual* neither prohibited or encouraged ERIC directors to select dissertations that were already in (or would appear in) *Dissertation Abstracts*. The basic reason for this was that for some clearinghouse subject areas, dissertations were more important than others. If a dissertation was scheduled for *Dissertation Abstracts*, it could go into RIE at Level III, that is, it would be announced only (EDRS would not furnish hard copy or microfiche copies) and the availability data would be included in the RIE entry.

But what about that elusive condition of quality? The Processing Manual's introduction to this subject was clear:

> *"Documents acquired as candidates for possible announcement in RIE must be subjected to a set of rigorous selection criteria to determine their proper disposition. Although in many cases the documents were originally acquired selectively, the decisions made by acquisitions staff are in the absence of the actual document, necessarily preliminary to the final selection process".*

MOST SUITABLE

1. Research and Technical Reports (experimental, basic, applied)
2. Evaluation and Study Reports
3. Surveys and Statistical Reports
4. Descriptions
    a. Model/Programs/Projects/Installations
    b. Innovative Practices
    c. Product Development (R&D)
    d. Implementation and Dissemination Reports
5. State-of-the-Art Papers/Reviews
6. Syntheses/Interpretations/Summaries
7. Bibliographies, Discographies, Filmographies (preferably annotated)
8. Conference Proceedings and Papers
9. Speeches and Presentations
10. Congressional Hearings/Reports/Documents
11. Position Papers
12. Guidelines
13. Practical "How to" Guides
14. Teacher Guides
15. Curriculum Guides
16. Tests, Measurement/Evaluation Instruments
17. Journal articles with a single overall theme so that the issue constitutes, in effect, monographic treatment of the theme
18. Conference proceedings (e.g., technical proceedings of annual meetings
19. Yearbooks
20. Serials of highly irregular publication or limited circulation, so that the issue constitutes, in effect, a unique item
21. All Clearinghouse information analysis products and bibliographies, except those items published in journals and short, informal or "on demand" bibliographies

ACCEPTABLE

1. Standards and Regulations
2. Annual Reports
3. Fiscal Reports (must contain substantive information)
4. Personnel Policies, Recruitment Materials, Employment Agreements
5. Data Collection or Survey Instruments (by themselves)
6. Books (commercial publications)
7. Manuals
8. Directories (current only)
9. Newsletters and Bulletins (from professional and other organizations)
10. Dissertations and Theses

UNSUITABLE

1. Journal Articles
2. Non-print Materials
3. Fiscal Reports (with no substantive information)
4. Catalogs (commercial, curriculum)
5. Proposals
6. Advertising and Promotional Materials
7. Broadsides and Posts
8. Flyers, Brochures, Ephemera

FIGURE 21: TYPES OF DOCUMENTS (MOST SUITABLE/NOT SUITABLE) FOR ERIC DATA BASE

The determination of quality rested upon several specific points, somewhat condensed in the following information contained in the *ERIC Processing Manual*.

1. Contribution to Knowledge; Significance

   Substantive contributions to the field of education were prime candidates for RIE, especially when the information was based on well-designed experiments or logical data collections. Research reports, for example, needed to be examined for objectives, hypotheses, methodology, conclusions, and recommendations. Negative results and positive results were often equally valuable. Frequently papers or presentations prepared for professional meetings covered subjects, methodologies, or areas of education which were on the "cutting edge" of knowledge and were not yet published in full monographic form. These or other documents which enhanced the knowledge base or which were exploratory for further treatment were also good prospects for RIE.

2. Relevance

   Some of the best documents in insert in the data base were those which dealt with current issues, or contemporary subjects. In other words, those which discussed the modern education world. The reviewer needed to have positive reactions to the following questions:

   a. Were emerging professional interests and topics covered?

   b. Did the document present work on the frontier of a particular subject?

   c. Were answers offered for current social problems?

   d. Did the document provide current and comprehensive information?

3. Innovation

   a. Did the document discuss an old subject from a new point of view?

   b. Did the document offer new ideas, new areas of research?

   c. Did the author substantiate or contradict earlier works?

   d. Was a new hypothesis offered for testing?

4. Effectiveness of Presentation

   Though an author might discuss a well-known subject, one work might be valuable because it had exceptional clarity or vigor or because it contained new insights, or merely was exceptionally well written. To help determine such qualities, the selector might ask the following questions:

a. Was the premise or thesis presented clearly?
b. Did the author cover the stated goals of his work?
c. Were the arguments logical and were they reasonably and clearly presented?
d. Were the procedures followed and data presented clear?
e. What about bibliographic references, annotations?
f. How did the document compare with others on the same topic?
g. Did the document integrate all logical source materials, including peripheral disciplines?

5. Relation to Current Priorities

Congress, OE, NIE, current legal cases, and so forth served to establish various types of interest priorities. Therefore, documents covering such subjects needed to be given special consideration for selection.

6. Timeliness

Because the data base was largely intended to be relevent to existing educational conditions, the documents entering it needed to be of relatively recent origin. There was no arbitrary document age limitation because there existed those documents which could be classified as "landmarks" or "classics"; yet the processing manual clearly stated: *"The document should be current in terms of the work being done in the area with which it is concerned. A large number of the candidates for RIE have a value which is in inverse proportion to their age."*

7. Authority of Author, Source, Sponsor

A few authors and a few organizations were regarded as authorities in their fields and there was a temptation to include everything they produced. However, even their products had to be critically analyzed.

8. Audience, Comprehensiveness

Generally speaking, the greater the possible audience for a document the greater the consideration needed to be given it for inclusion in RIE. *"In other words, an otherwise marginal document may be selected on the basis of the large number of people known to be interested in its topic (high user demand) whereas a marginal document with a minuscule audience is in double jeopardy".*

9. Availability

The *ERIC Processing Manual* took a very clear position on availability:

> *"Documents which are commonly and easily available on a nationwide basis should generally be evaluated by selectors very strictly. It is unlikely that the use of such documents by the educational community depends on ERIC. They will be in many library collections and will therefore be frequently cited and readily consultable by users quite apart from any announcement in*

> *RIE. Unpublished papers and those having only local or specialized distribution should, on the other hand, be evaluated more leniently. ERIC may be the only data base that has acquired the document and the only one in a position to preserve the document for future uses."*

There was still another very important criterion for document selection: legibility or reproducibility. This aspect had nothing to do with quality. But if a document could not be reproduced in hard copy or microfiche it was worthless in the data base. And one could not always determine this criterion at a glance. Therefore, the Processing Manual discussed in some detail such matters as type size, broken type, smudged type, colored paper, colored inks, translucent paper, photographs, handwritten pages, oversized pages. In fact, the Facility prepared a handbook which illustrated sample pages with sample problems for the guidance of document selectors.[9]

For one who might be aware of proposals, contracts, and the ERIC requirement of budget breakdowns (the latter specifically referring to the "Performance Category Budget") some reference needed to be made to the size of the clearinghouse monthly or yearly input into RIE. That person might ask, "How does anticipated input affect quality", or "Are there input quotas?" It was true that the clearinghouses did, in their annual proposals, elect to contribute a certain number of entries for RIE, request a specific amount of money, calculate a unit cost for each acquisition and selection, and obligate a certain portion of an employee's time for the task. So, perhaps, it was true that these conditions did exercise some subtle influence on the selection process. How much was difficult to calculate. However, Central ERIC managers clearly stated that estimates projected in a contract should not be viewed as an absolute quota.

Central ERIC's position was unequivocal on the subject of quotas. The *ERIC Policy Manual* stated:

> *"There are no weekly, monthly, or yearly quotas (minimum or maximum) for RIE input from any Clearinghouse. Document selection should not be made to meet an internal quota any Clearinghouse may have established for itself, or to meet the yearly total of RIE input estimated on the Clearinghouse Performance Category Budget. Some limitations on the overall size of RIE do exist, which are related to subscription price. Should any Clearinghouse anticipate*

*or observe a dramatic increase of its RIE input, such information should be relayed to Central ERIC for planning purposes"*10.

One additional factor of availability should be mentioned: level of input. Briefly, the following conditions existed for RIE:

Level I - Available from EDRS in microfiche and hard copy.
Level II - Available from EDRS in microfiche only.
Level III - Not available from EDRS.

Permission for Level I or Level II was obtained from the originator (personal author or corporate author). However, the Level III condition for entry into RIE was for announcement only. In all Level III instances, the RIE entry did contain a statement as to how the document was available (for purchase from a publisher or particular organization, for example). Obviously, documents should not be selected for Level III if they were not relatively easy to obtain.

Exactly who was responsible for selecting what goes into the document data base? The clearinghouse director. But clearinghouses did have some variations as to how selection was actually handled. There were those situations where, in actuality, the director reviewed all the documents and actually selected them. In other clearinghouses (probably the majority) subject specialists, such as assistant directors or associate directors, reviewed the incoming documents, placed them into categories of rejects and recommendations, and then turned them over to the director for review.

From its inception in 1967, the Clearinghouse on Reading and Communication Skills (originally on just the Teaching of English) employed a different methodology for selection. The director, O'Donnell, sent letters to leaders in the profession and asked them to review documents. Later, when his expanded scope included Reading, O'Donnell formed the "Committee for Evaluation of ERIC Documents" which included members of various professional associations. O'Donnell sent them acquired documents, along with an evaluation form, and asked for a quick turnaround time for reply. He then checked the returned forms and made final selection decisions. Throughout the history of his clearinghouse, O'Donnell enjoyed outstanding cooperation from these dedicated people. In 1979, O'Donnell stated that there were "*...all in all about 280 professionals who, I am reminded from time-to-time, don't get the thanks or credit they should for the work they are doing, not only for ERIC but for their professions*". The Languages and Linguistics clearinghouse adopted a similar selection procedure after witnessing O'Donnell's success. [11]

Precise statistics concerning selection have varied throughout the course of ERIC's short history. And exact numbers were not too important because of so many possible variables such as new clearinghouses, competitions resulting in clearinghouse changes, and variations in acquisition techniques. During the earlier years, Central ERIC always thought in terms of approximately one-third of the documents acquired being selected for RIE. Later on, perhaps around 1975 or so, this generality began to change to a slightly higher figure, that is, about 40-45 percent of the documents acquired were selected. The generally accepted reason for this change was that clearinghouses and the ERIC Facility became more sophisticated in the acquisitions process and the resultant materials yielded an increased number of relevent and high quality documents.

With the foregoing brief background of the ERIC selection story, what did the data base look like? How many of what kind of documents did it contain? Because of a tagging technique and a computer program, such data were available beginning September 1974. Examine Figure 22 on the following page. Care should be exercised in making snap deductions from this table. For example, it cannot be stated that only 33.34 percent of the documents related exclusively to research, for research might be the principal element in a document counted as a dissertation or bibliography. And project descriptions could also be oriented toward research or curriculum. Nevertheless, the table does give broad slices of the types of document input into the data base.

A couple of studies of the data base contents should be mentioned briefly. William Asher and Edward Vockell, of the Purdue Research Foundation, received a research grant from OE to examine "Information Quality and

PUBLICATION TYPES IN THE ERIC DATA BASE

STATISTICS FOR THE PERIOD SEPTEMBER 1974 — MAY 1979

CODE	PUBLICATION TYPE	PERCENT OF FILE (MAY 1979)	NUMBER OF ACCESSIONS (MAY 1979)
R	RESEARCH REPORTS	33.34	24,799
S	SPEECHES, CONFERENCE PAPERS	17.13	12,742
G	GUIDES	12.30	9,148
B	MONOGRAPHS, BOOKS	7.36	5,474
K	PROJECT DESCRIPTIONS	5.99	4,457
L	BIBLIOGRAPHIES	5.29	3,933
C	CURRICULUM MATERIALS	4.96	3,692
T	DISSERTATIONS, THESES	2.99	2,226
J	SERIAL PUBLICATIONS	2.43	1,809
N	STATISTICAL DATA	1.69	1,254
P	PROCEEDINGS	1.63	1,215
H	LEGISLATION	1.16	863
O	OTHER	1.16	863
Y	ANNUAL REPORTS	1.03	766
D	DIRECTORIES	.72	534
Q	TESTS, QUESTIONNAIRES	.64	474
V	VOCABULARIES	.12	86
A	AUDIOVISUAL MEDIA	.05	36
M	MAPS	.01	4
	TOTALS:	100.00%	74,375

FIGURE 22: PUBLICATION TYPES IN THE ERIC DATA BASE

Education Decision Making". The report was published in February 1973. The authors selected 102 research-oriented documents from 1971 entries in RIE. These documents were given for evaluation to two groups comprised respectively of about 100 educational research specialists and about 100 education decision makers. Through analyses and comparisons of the questionnaires, Asher and Vockell attempted to determine:

1. The quality of the information being disseminated.
2. The acceptance levels of the reports among education decision makers.
3. The plans formulated by educational decision makers as a result of information being disseminated.
4. How these implementation plans are related to the quality of the information being disseminated.

Asher and Vockell provided a succinct summation of their findings:

> *"The results indicated that, while there were some high quality reports in RIE, the overall quality was rated low by the Research Specialists. On the other hand, the acceptance levels of these same reports among Decision Makers was high. Thus a significant disparity was found between the quality of the reports and their acceptance levels among educational practitioners. Specific information relating to actual decisions these practitioners would base on these reports was not adequately obtained in this study. However, it was inferred that the rapid dissemination of low quality information was actually a disservice rather than an assistance to the Decision Makers.*
>
> *"In addition, the results suggested that Decision Makers with lower degrees of research sophistication were more likely to overrate the quality of the research. Although no differences in quality of research were found among the various clearinghouses, differences in quality were found to be related to the sponsorship of the paper. Papers sponsored by organizations with higher quality control were of significantly higher quality.*
>
> *"The results, therefore, indicate that RIE often disseminates low quality information which is likely to have harmful effects on its intended audience. The major recommendation for this study is to introduce a system of refereeing into the RIE system. A rapid refereeing system would retain the advantages of RIE while reducing the negative side effects found in the present study."* 12

The same kind of criticism came from no less an authoritarian quarter than Harold Howe II, formerly the OE Commissioner of Education. In an address to the gathering of researchers at the annual meeting of the American Educational Research Association, in San Francisco, on April 21, 1976, Howe stated:

> *"My one comment on the ERIC system is that if it had started with a stronger element of quality control and less concern with coverage, it would now be a better show. Not that it isn't useful, and its brief studies on particular issues are excellent. But at the touch of a computer button, one learns more than one cares or needs to about what's in print on most education-related subjects. I realize, of course, that there is a process of selection for what is reported by ERIC. I wonder whether it would be possible to develop a process of grading."* 13

Both the study and Howe's comments were interesting, but hightly debatable and controversial. Rightly or wrongly, they had practically no impact on ERIC acquisition or selection procedures. Such criticisms, however, raised several areas of uncertainty for ERIC managers:

1. The highest degree of quality in education was elusive, uncertain, and seldom unanimously agreed upon.
2. ERIC never expressed an intention to select quality documents to the nth degree as apparently Asher and Vockell desired.
3. Was intense refereeing the basic purpose of an information system? What other data bases engaged in such a role?
4. What were the costs of such intensive refereeing?
5. How could document selectors foretell the usage of documents in the data base?
6. How did one achieve consistency in an intensive, refereeing process?
7. Was not the acquiring, selecting, indexing, abstracting, and announcing an enveloping enough job without introducing the highly controversial task of selecting only the few best documents? What kinds of questions would refereeing raise concerning educational policy, freedom of choice, legislation, educational policy, the role of the government, and the like? 14

Many other questions remained, but the proposed solutions sounded impracticable. From an editorial, critical, and hindsight point of view, one could say that the critics might have had more influence if they had suggested more emphasis on criticism, refereeing, and evaluation of the ERIC information analysis program. Such an approach might have been more meaningful, more practical, and more practicable.

Another study which touched on the subject of selection was the 1975 study, "Report and Guidelines on Improving the Retrieval of Product Information from ERIC". The author was JoAnn M. Steiger of Steiger, Fink and Smith, Inc., under contract with NIE. One of Steiger's principal findings was that:

> *"...ERIC has a disappointingly small collection of practitioner-oriented documents. Teachers, supervisors, administrators and curriculum developers seeking practical information to assist them in improving instruction require 'how to' documents rather than theoretical papers. The ERIC system was not originally established to meet this need, and would require a considerable addition of documents concerning educational products, programs and practices to serve as a comprehensive resource for practitioners".* [15]

Also, Cynthia C. Hull and Judith Wanger, of the System Development Corporation, had done some survey work among educators and found that practically all categories of school-based people expressed a very strong requirement for information on curriculum materials for classroom usage. [16]

These results were not surprising. And Steiger was correct in stating that ERIC was not established as a basic resource for teachers and practitioners. Hoover was acutely aware of this fact and had encouraged an awareness of practitioner needs in all phases of ERIC operations. He wanted to make a quantum jump into a large expansion of the data base through inclusion of curriculum materials of all kinds. Chesley felt the same way. So did most of the clearinghouse directors. In fact, there were many discussions and half-formulated plans on this subject: perhaps there should be a separate data base, or at least a partitioned data base; perhaps there should be a separate abstracting-indexing publication; perhaps at least a separate section in RIE for curriculum materials.

By the middle of 1979, however, plans for handling curriculum materials were at least appearing on paper. The "Information Resources Planning Document, FY 80-81", which came out in the spring of 1979, stated:

> *"The educational practice file has been under development for the past year and a prototype for this file is about to undergo a small-scale test during FY 79 and 80. Therefore, the characteristics of a practice file and the form it will take are yet to be determined. For example, an option still open is whether or not the file will have an announcement journal similar to RIE or whether it will be available solely through a computer terminal. Also, at this time decisions had not been made concerning whether the file would be integrated directly into the system and, if so, whether as a separate clearinghouse or in a mode which would see it distributed among the existing clearinghouses"*[17].

So, in mid-1979 it appeared that curriculum materials had a chance for expanded coverage. However, once again these plans hinged on the availability of funds.

Publication of RIE

The first issue of RIE *(Research in Education)* appeared in November 1966. It was a skinny little volume, in sidewise printed format, with squiggly computer "all cap" print, containing only 45 document entries. The North American ERIC Facility indexers and abstractors did all the work. This first volume did not look promising, appearing to be little more than a mere reprinting of computer printout pages. Yet many people had worked hard to get that volume off the press. In Central ERIC there were Eller, Kennedy, and, of course, Burchinal, who were jointly responsible for the publication. At North American there were Barbara White, Lee Foster, Gene Dinielli, James Houston, William Burgess, Arden Lanham, and many others who could take credit for giving birth to the first volume. From early 1968 onward, Welsh, of Central ERIC, became responsible for RIE and managed its monthly format, with the myriad of permutations that have appeared since that date.

The copy for the original issue of RIE was prepared at the ERIC Facility as was that of those which followed. This was then sent to the U.S. Government Printing Office for printing and distribution. Although some issues were delayed, RIE has had an uninterrupted monthly run, beginning with Volume 1, Number 1, November 1966. Cumulations of the monthly issues also came from GPO. North American was the sole source of the input of indexing and abstracting for the first issues, the clearinghouse contributions not appearing in print until the July 1967 issue.

To the surprise of many people, RIE quickly became a best seller among the index-abstract publications of the federal government. The number of paid subscribers rose from a mere 209 in January 1967 to 4,550 in June 1968. In addition, over 1,000 copies were distributed free to state libraries, state and local education agencies, professional organizations, federal agencies, and various colleges and universities. During the seventies the subscriptions leveled off around the 5,000 figure and by mid-1979 it remained at about that number. Figure 23 on the following page indicates the growth of the total document data base file.

A complete month-by-month account of how RIE progressed from its first appearance to its present form was a long, complicated story. For such a story would have to include discussions about training sessions, input levels, quick availability documents, editorializing in abstracts, editorial policies, reproducibility problems, indexing for retrieval, indexing and abstracting unit costs, abstracting quality, file partitioning, publication type tagging, entry format changes, duplicate problems, copyright clearances, computer programming improvements, spin-off products, paper tape input, optical character recognition, and possibly a dozen other subject or operational areas.*

All in all, RIE has been a successful publication. Procedures for its publication were upgraded in many ways. Its costs and its value were impossible to determine; there were too many imponderables. Looking at the general utility of RIE, the value of the data file, and the computer searching capability, one had to agree that RIE is indeed a valuable and useful tool in the field of education.

The Story of CIJE

The background of CIJE was much different from that of RIE. More compact, more episodic. It started with Burchinal's concern that the journal literature in

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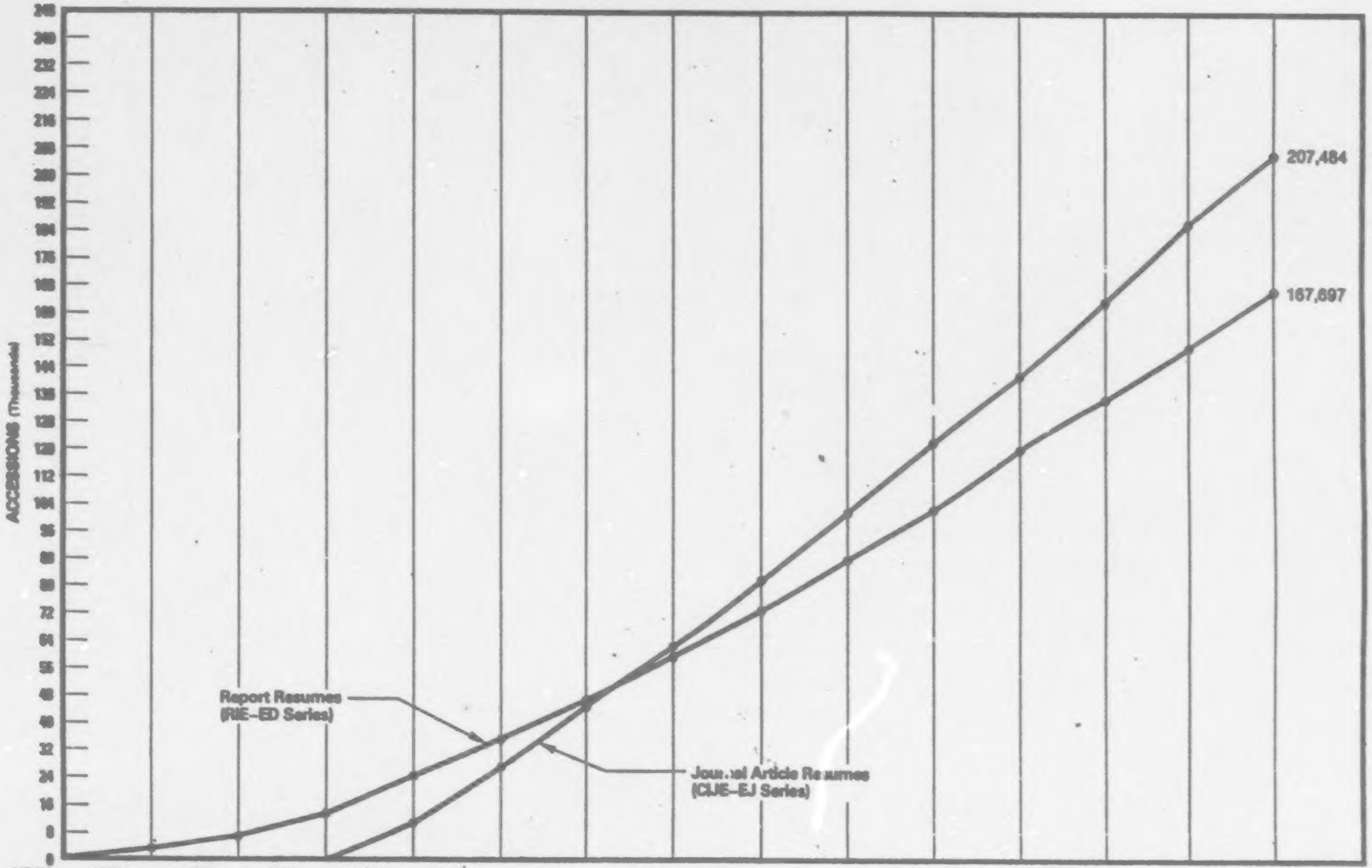
*Anyone interested in the full details of current indexing, abstracting, and publication procedures for RIE should consult the *ERIC Processing Manual* (ED 092 164) and a current copy of RIE.

ERIC Data Base File Growth

Resume Files



	YEAR	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
REPORTS (RIE)	Accessions Added:	1,834	3,469	8,803	10,453	10,456	12,330	12,230	14,167	14,466	15,341	16,819	15,271	15,303	16,756	
	Cumulative Total:		5,302	14,105	24,558	35,014	47,344	59,574	73,741	88,207	103,548	120,367	135,638	150,941	167,697	
ARTICLES (CIJE)	Accessions Added:				11,707	15,892	17,672	17,480	19,413	19,708	20,054	20,326	21,099	22,866	21,267	
	Cumulative Total:				11,707	27,599	45,271	62,751	82,164	101,872	121,920	142,252	163,351	186,217	207,484	

FIGURE 23: ERIC DATA BASE FILE GROWTH

education was not being controlled adequately. To find out, ERIC negotiated a contract, beginning in June 1967, with Herner and Company, of Washington, D.C. Saul Herner, Mary Herner, and Janet D. Griffith were involved in the study; the later performing the bulk of the research effort. There were three basic purposes:

> "1. *To identify the English language periodicals and other serials relating to education.*
>
> 2. *To analyze the coverage and treatment of these periodicals by the abstracting and indexing services relating to education that are presently available; and*
>
> 3. *To identify the omissions and shortcomings, if any, in the present secondary coverage and treatment of periodical literature in education."* 18

The study was thorough. It was based on a questionnaire survey dispatched to a cross-sectional group of educators responsible for research and demonstration projects. They were asked to list the serials and secondary publications they most frequently read or consulted. These titles were then compared with coverage in the major abstracting and indexing publications and an analysis was made of the qualitative and quantitative treatment of the articles within those publications. Also, the respondents were asked about their desires, preferences, and problems relating to the coverage of journals and articles.

The Herner team accomplished a very detailed analysis of the existing journal literature and its coverage, prepared many journal lists, and made many different comparisons. The team's overall conclusion was:

> *"From the survey it developed that there are approximately 350 to 400 journals which could be considered 'core' or central to the field of education. These produced approximately 20,000 pertinent articles per year. Of the 350 to 400 'core' or central journals, the mean coverage by title by the ten most prominent abstracting and indexing publications dealing with the educational subjects is 22.3 percent. No single abstracting or indexing publication covers more than 38 percent of the serial titles deemed 'core' or central by the survey respondents. Roughly, about 32 percent of these serial titles are not covered by education. A mean of only 25.4 percent of pertinent articles within serials of claimed coverage are actually picked up by the major abstracting or indexing publications. This mean percentage includes the figures for* Education Index, *which averages 57.9 percent of the pertinent articles in the edutional serials it covers."*

From this overview of their detailed analysis, the Herner team concluded: *"Thus, there is a clear and serious problem in the secondary coverage and treatment of educational serials, and a single, comprehensive secondary publication in the field is indicated"*. Herner and his staff also concerned themselves with how the job should be accomplished. There were three basic possible approaches:

1. straight indexing, after the manner of *Education Index*, with some additional indexing for each bibliographic citation,
2. straight abstracting, similar to the procedures of *Psychological Abstracts*,
3. controlled vocabulary annotating, which was a sort of mixture between complete indexing or complete abstracting. Herner recommended the latter because it was reasonable in cost and probably fairly effective for the user[19].

Burchinal and the Central ERIC staff went along with Herner's recommendations and because during early 1968 there was a wave of federal sentiment for cooperation with American industry, Central ERIC thought it was good idea to offer the journal publication for commercial publication. Eller and Trester secured the legal green light for this approach after discussions with the HEW legal staff. Trester thought the most appropriate name for the journal should be *Journal Index to Education*, which would have the acronym JIE. Missar checked through all the known worldwide journal titles and found no conflict with that title.

The JIE operational characteristics were to be similar to those for RIE. The clearinghouses would acquire subscriptions to the journals, accomplish the indexing, prepare an annotation (only when considered necessary) instead of an abstract, complete an input form (the ERIC Journal Article Resume) and send the input forms to the ERIC Facility. The latter would then produce a magnetic tape which would be sent to the selected commercial contractor for publication of JIE. Trester incorporated all of these operations into an RFP and on August 20, 1968, the OE Contracts Office sent the RFP to 120 publishing firms throughout the country. A bidders' conference was held in September, the proposals were received and evaluated, and the contract was signed with Crowell Collier Macmillan, Information Sciences, Inc.

Jeffrey Norton, President of Information Sciences, came to OE in January to visit Burchinal and iron out some of the final contract negotiations. Norton proposed that the name of JIE be changed because he had started a string of publications, all of which had "Current Index" as key words in the titles. As a concession to his interests, Burchinal agreed that the new publication should bear the title *Current Index to Journals in Education*, or CIJE[20]. Lyell C. Dawes, Jr., Vice President of Information Sciences, Inc., and Richard Killin were primarily involved with CIJE from the beginning, as was William Burgess, formerly a member of the North American ERIC Facility staff. Subsequently, Burgess became the project director of CIJE and primarily responsible for its publication until March 1976 when he moved to the California-based Systems Development Corporation. Burgess' replacement was David Biesel, who had worked on the CIJE staff for several years.

Marron, of course, kept the clearinghouse informed of the negotiations and began to involve them in the preliminary steps for the operational phase of CIJE. He sent them journal lists so that the directors could choose those of most interest to their subject scopes. Journal indexing and annotating procedures were prepared and a journal input processing form created. Contractual monitoring of CIJE was transferred to Welsh, who then became primarily responsible for both of ERIC's major monthly publications.

The clearinghouses became very quickly involved during the spring of 1969 with their journal activities. In a January 31 letter, Marron told the directors: *"It is planned to begin CIJE entries with the January 1969 journal issues. Entries for any 1969 journals received at the clearinghouses during January, February, and up to March 11 will be due at the CIJE contractor site on or before March 17. The first issue of CIJE is scheduled for April 15"*[21]. The first issue appeared soon after the promised date, and after a few months the issues were appearing regularly, although a bit behind schedule in the beginning.

That first issue of January 1969 was composed of entries from a total of 287 journal titles, of which 182 were core journals, according to the Herner definition. Subsequently, the index involved more and more journals. At first these additional journals were very carefully inspected, screened, and debated during meetings of the CIJE Advisory Board. Later on, the clearinghouses adopted journals or deleted them according to an informal arrangement with the publisher. After a few years, the total number of journals represented in CIJE came to over 750, and although specific journals have been added or deleted, at mid-1979 they remained at that level.

A couple of peculiarities about CIJE: initially only the so-called "core" journals represented in the publication were indexed on a cover-to-cover basis. For the remaining journals (usually referred to as being covered "selectively") the clearinghouses chose those articles dealing primarily with the subject of education. In general, any selection processing was not deemed to be on a qualitative basis. The determining factor in the selection process was the pertinence of the article to the field of education. Therefore, for example, a librarian could be reasonably sure that all articles would be included in CIJE in the case of the *Harvard Education Review*, but only articles on education would be taken from a journal such as *Science*.

A second unusual operational circumstance for CIJE was the use of "one-shot" articles; that is, unusually good educational articles which appeared in popular magazines. These, also, could be entered into the data base. However, this procedure had a tendency to confuse users and when these materials appeared in the list of journals printed in CIJE they seemed out of place. By 1979 Central ERIC was no longer encouraging the clearinghouses to spend time looking for such off items, but was suggesting they might be included only when discovered during day-to-day operations.

A third important distinction of CIJE was that microfiche copies of articles were not obtainable from EDRS. To consult a referenced article in CIJE a user had to go to a library and examine the journal itself (perhaps obtained on interlibrary loan) or write to the journal for a Xerox copy or a reprint. This unavoidable circumstance represented, of course, an incovenience, indeed sometimes great difficulty for users. During the first half of 1977, however, Central ERIC began earnestly to alleviate this problem when Hoover and his staff entered into discussions with James Sterling and Marlene Hurst, representatives of University Microfilms, International, Ann Arbor, Michigan. As a result of these discussions, the August 1977 edition of CIJE contained a notice that University Microfilms could furnish paper copy reproductions, approximately the same size as the original, for about 55 percent of the journals covered in CIJE. The price was not cheap: the articles cost $4.00 each ($6.00 for articles dated prior to January 1976).[23] It was University Microfilms' intention to negotiate arrangements with the remaining 45 percent of the journals for an expansion of the service, hopefully to cover all of them sometime in the future.

In the latter part of 1978 something unusual happened to CIJE. For many years there had been some random discussions in Central ERIC concerning the need for legal information related to education. Consequently a study contract was negotiated with the National Foundation for the Improvement of Education, in 1977, to look into the literature dealing with educational law and policy. As a result of the research and recommendations of that study, Central ERIC decided to amplify the CIJE input for the Clearinghouse on Educational Management. In fact, beginning in 1979, that clearinghouse began a project which involved reviewing 100 law journals, with a resulting additional input of about 500 articles a year in CIJE.[25]

Overall, CIJE has been a successful publication and has done a good job of controlling the educational periodical literature.* One constant problem which plagued the publication was its low volume of subscriptions. Burgess was painfully aware of this, worked hard to solve it, and was continually optimistic that he could. In a statement he prepared for the 1976 directors' meeting, Burgess was still hopeful. *"CIJE is now in its eighth year of publication,"* he wrote. *"Subscriptions hover consistently*

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*One of the critics of CIJE was Jessica Harris, of the School of Library Science, Columbia University. In a book review for the *Journal of the American Society for Information Science* in the March-April 1970 issue, she pointed out a number of specific detailed problems and inconsistencies with CIJE entries. She also used that opportunity to criticize ERIC indexing, particularly the then chaotic condition of identifiers. See also Marron's reply in the May-June 1971 issue.

around 2,000, which indicates an acceptance in the education/library community, but also indicates we have not reached the number of subscribers to the companion publication Resources in Education. *During 1976, Macmillan Information will increase the advertising and promotion efforts directed primarily at those subscribers to RIE who do not subscribe to CIJE. It is our hope that the subscription list can be increased to 3,000 in 1976 and to 4,000 in 1977."* [24] It was that disparity between RIE and CIJE subscribers which Central ERIC managers could not understand. Why would an RIE subscriber not subscribe to CIJE? No one, including Burgess, could provide a logical answer. The expectations which Burgess expressed were not realized; the CIJE subscription total continued to remain at about 2,000 copies.

The CIJE contract ran for several years without competition. It was a relatively small contract, from the standpoint of OE and NIE, varying in total expenditure with fluctuating conditions of the services on the part of Macmillan. (Sometimes over $100,000, sometimes under that amount). [26] Toward the end of 1978 Macmillan had held the contract for about 10 years and had successfully emerged from two competitions. On September 26, 1978, NIE issued an RFP for the CIJE contract which was to be effective January 1, 1979. It was to be a one-year contract with four options to renew. Macmillan lost the competition. The winner was Oryx Press, of Phoenix, Arizona, which published other indexes and library-related items, and was headed by Phyllis Steckler.

Macmillan asked the NIE contracts office for a debriefing of the contract negotiations, so Catherine Welsh, the CIJE project monitor, and NIE contract officials went to New York to meet with the Senior Vice President of Macmillan Information, Edward Barry, the CIJE project officer, David Biesel, and a Macmillan legal representative, E. Klagsbrun. During the debriefing session, Barry tentatively stated that Macmillan might wish to publish CIJE despite the loss of the contract, since the main entry section for CIJE was available on tape (as it had been in the past) for purchase from the ERIC Facility. [27] Obviously, a part of Macmillan's concern was the fact that during the previous September they had sent out renewal notices to about 1,800 subscribers and had collected $80 from each one, plus an additional $80 from those who had ordered the midyear cumulative volume. The total came to approximately $120,000.[28]

So as to permit an orderly publication schedule on the part of Oryx Press, the NIE contracts office permitted Oryx to secure a copyright with the following provisions:

1. Oryx Press obtained exclusive copyright for CIJE and the tapes from which it was produced.
2. Oryx Press granted the ERIC Facility the right to reproduce and distribute the CIJE data base tapes.
3. Oryx Press reserved to itself the exclusive right to prepare CIJE-type issues and cumulations from the tapes.

Therefore, the ERIC Facility could sell and distribute the tapes and anyone could use the tapes to print a limited number of abstracts from discrete computer searches, but it appeared unlikely that anyone could generate a journal similar to CIJE.[29] Later on, Macmillan announced that it was not going to continue publication of a journal similar to CIJE and the company began to refund unfulfilled subscriptions.

The ERIC Facility

For quality of competence, for intelligent direction, for outstanding innovation, and for overall high standards of operational performance, the Information Systems Division of ORI, Inc. proved to be an invaluable asset to Central ERIC management in operating the ERIC system.

It was in January 1970 that this relationship began. Since that time the Information Systems Division successfully emerged from two competitions (in 1973 and 1976). As of mid-1979 the current was scheduled to run until November 15, 1980.

The current organizational structure began its corporate career in 1952 as Documentation, Inc., a highly successful and much respected organization which was involved with various developments in the new area of information storage and retrieval. In 1965 the Leasco Corporation acquired Documentation Inc. as well as some other information-related organizations and the entire organization became Leasco Systems and Research Corporation. Through a natural evolution and consolidation, Leasco became the Information Systems Division of the superstructure, Operations Research, Inc. (which became ORI, Inc. in 1979). In December 1973 all of these became an independent corporation, newly constituted as an employees' stock owner trust, in which all vested employees had a piece of the corporate action. ORI, Inc., thus became one of only about 250 such employee-based companies in the country.[30]

The budget for the Information Sytems Division (or the ERIC Facility) has varied considerably since 1970. This has been due to an increasing number of special short term system tasks as well as the addition of several long term responsibilities. These were accomplished either through contract amendments, statements in the RFP's, or discussions with Central ERIC managers prior to contract renewals. Beginning in 1970, at about $435,000, the annual Facility budget climbed to the $500,000 level and remained there for five years, then increased (with additional workload) to slightly under $900,000 for FY 1979. The number of employees, for several initial years was fewer than 20; however, that had risen slightly upward to a mid-1979 total of 24 employees, 4 of whom were part-time.

A large part of the very successful alliance between this contractor and ERIC was due to the ability and industry of the Facility director, Wesley (Ted) Brandhorst. His background included a degree in library and information science from the University of California, Berkeley, plus 10 years' experience with the same company prior to the ERIC contract. A significant part of that earlier experience was his involvement with the NASA Scientific and Technical Information Facility, an operation similar to ERIC's, except for the subject matter.

What does the Facility do? There are, in fact, so many detailed functions it is difficult to generalize them into a meaningful description. Figure 24 contains the current organizational chart of the Facility as of August 1980 and includes functions, duties and activities of each organizational element. This array shows the myriad responsibilities and importance of the Facility's role in the ERIC system.

The Facility's own very succinct statement of its overall effort gave another approach to understanding the vast amount of detailed effort it was involved with:

> *"Services provided include:*
>
> - *receiving and dispatch*
> - *document control*
>   *(screening, duplicate checking, assignment, storage, special distributions, accessioning)*
> - *document analysis*
>   *(cataloging, indexing, abstracting, editorial review)*
> - *authority list maintenance*
>   *(lexicographic analysis)*
> - *data preparation*
>   *(preparing machine-readable data)*
> - *computer processing*
> - *system and file maintenance*
> - *data base management*
> - *programming*
> - *reference responses, etc.*
>
> *The Facility prepares and delivers a variety of products and publications from the ERIC data base. These include:*

- *Resources in Education (RIE)*
  (monthly abstract journal and its Semiannual and Annual Indexes)
- *ERIC Thesaurus*
  (quarterly editions)
- *Source Directory*
  (quarterly editions)
- *Thesaurus of ERIC Descriptors*
  (annual editions of the rotated and hierarchical versions)
- *Contract/Grant Number Index*
  (annual editions)
- *Report/Project Number Index*
  (quarterly editions)
- *Clearinghouse Number/ED Number Cross Reference List*
  (quarterly cumulative)
- *Title Index*
- *ERIC Processing Manual*
- *Directory of ERIC Clearinghouses*
- *System Documentation*

plus numerous other listings, compilations, and indexes. Staff of the Facility serve ERIC in an advisory or consultant capacity, as for example, serving on the Panel of Educational Terminology, participating in tape user seminars, or doing analyses of the data base. A heavy emphasis is placed by the Facility on scheduling, statistical reporting, and cost accounting (including unit cost reports), for purposes of management control."

The foregoing schematic materials, in very brief form and with emphasis on the production characteristics of RIE, display only part of the totality of the Facility operational detail. There were many additional activities in which the Facility was engaged. Some were initiated by Central ERIC and others were proposed by the Facility as a part of its series of System Improvement Projects (SIPS). Following are representative samples of such functions.

1. Vocabulary Improvement Program

Although a very large portion of the total work for the VIP activity lay in the hands of the clearinghouse vocabulary people, the Facility also had a mountain of paperwork and a very large

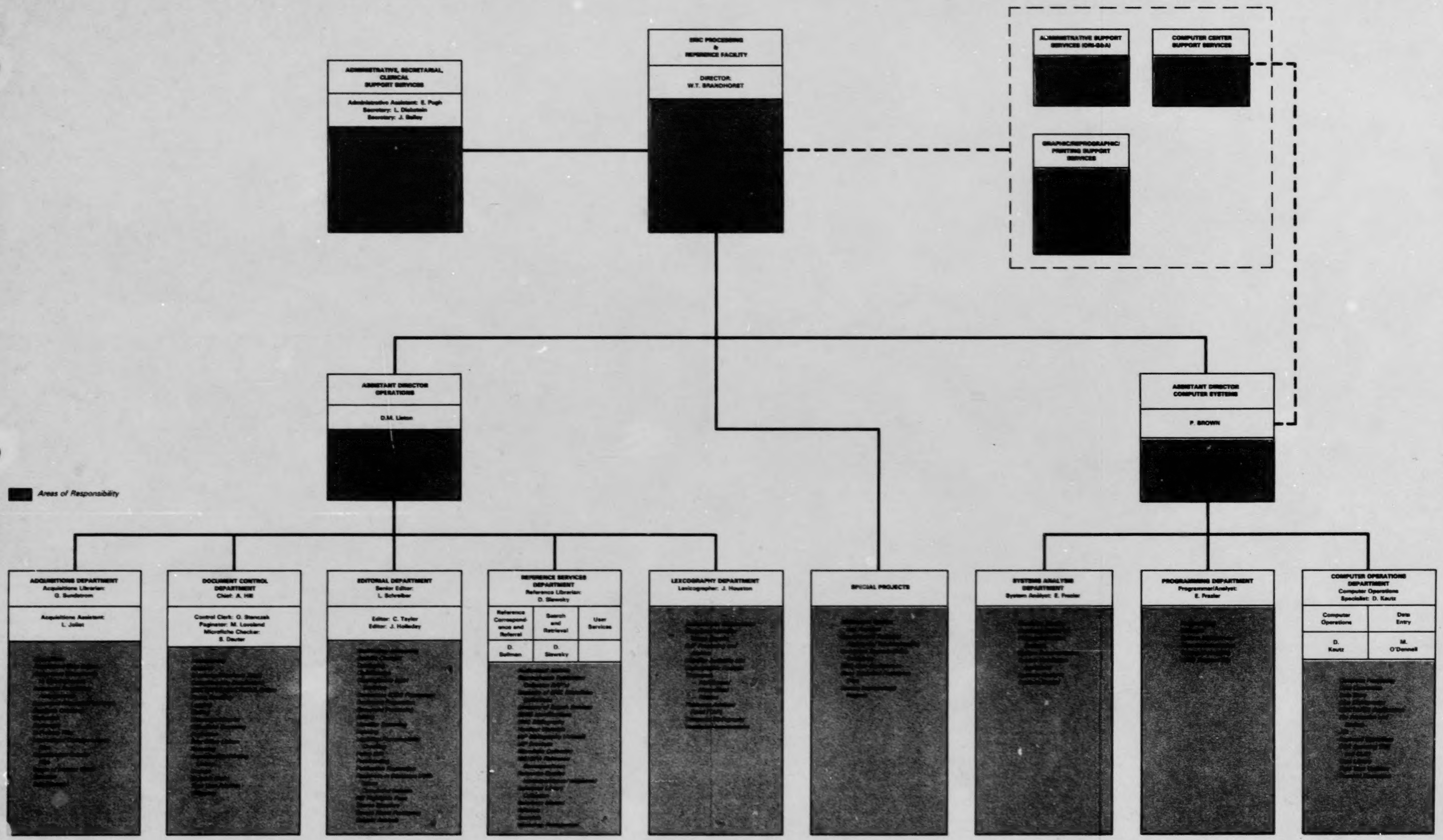
ADMINISTRATIVE, SECRETARIAL, CLERICAL SUPPORT SERVICES
Administrative Assistant: E. Pugh
Secretary: L. Diskstein
Secretary: J. Bailey
ERIC PROCESSING & REFERENCE FACILITY
DIRECTOR: W.T. BRANDHORST
ADMINISTRATIVE SUPPORT SERVICES (ORI-GSA)
COMPUTER CENTER SUPPORT SERVICES
GRAPHIC/REPROGRAPHIC/ PRINTING SUPPORT SERVICES
ASSISTANT DIRECTOR OPERATIONS
D.M. Liston
ASSISTANT DIRECTOR COMPUTER SYSTEMS
P. BROWN
Areas of Responsibility
ACQUISITIONS DEPARTMENT
Acquisitions Librarian: G. Sundstrom
Acquisitions Assistant: L. Jolles
DOCUMENT CONTROL DEPARTMENT
Chief: A. Hill
Control Clerk: G. Stanczak
Paginator: M. Loveland
Microfiche Checker: S. Dauter
EDITORIAL DEPARTMENT
Senior Editor: L. Schreiber
Editor: C. Taylor
Editor: J. Holladay
REFERENCE SERVICES DEPARTMENT
Reference Librarian: D. Slawsky
Reference Correspondence and Referral
Search and Retrieval
User Services
D. Sullman
D. Slawsky
LEXICOGRAPHY DEPARTMENT
Lexicographer: J. Houston
SPECIAL PROJECTS
SYSTEMS ANALYSIS DEPARTMENT
System Analyst: E. Frazier
PROGRAMMING DEPARTMENT
Programmer/Analyst: E. Frazier
COMPUTER OPERATIONS DEPARTMENT
Computer Operations Specialist: D. Kautz
Computer Operations
Data Entry
D. Kautz
M. O'Donnell

FIGURE 24: **ERIC Facility Organization Chart**

intellectual load on its part. Specifically, the Facility's role involved lexicographic analysis, publication and coordination of the *Play Thesaurus* (the interim word list to test the total validity of the *Thesaurus)*, the ultimate Thesaurus file update and an update of the existing terms in the RIE and CIJE files. The last three activities required considerable computer programming support.

2. Publications

The Facility became responsible for writing, printing, and distributing two periodical publications:

- *Interchange:* a periodic newsletter, specifically oriented toward those organizations throughout the nation (also in some foreign countries) which used the data base for computer searching. It contains news about the latest developments, changes, and future activities of the data base. It was first published in November 1972 and a total of 16 issues had appeared by mid-1979. All of them were sent at no cost to standing order customers and data base subscribers.

- *ERIC Administrative Bulletin:* a monthly publication which the Facility started to publish in the fall of 1978. The antecedent for this publication was *ERIC Management Notes*, first published by Central ERIC in August 1967. Management crashes, budget crunches, and administrative brush fires frequently interferred with the available time of Central ERIC personnel. It became too burdensome an activity, so Central ERIC handed over the task to the ERIC Facility, which came through in its usual proficient manner. The EAB was a very handy and valuable vehicle with which to inform all system workers about the details of system news events.

3. ERICTAPES/ERICTOOLS

With the growing availability of computer time throughout the country, and with the greater demand for ERIC searches, there was strong interest in acquiring the ERIC computer files. Basically there were three pertinent files:

A. Resume Linear Files, consisting of RIE and CIJE resumes as they appeared in those publications (document description, cataloging, indexing, and abstract or annotation);

B. Posting Files, which were the inverted index files of the ERIC data base, in alphabetic sequence by index term, and each record consisting of the index term itself and the accession numbers of all the documents indexed under that term, and

C. Thesaurus Entries, the computer file from which the Thesaurus was printed, which provided a computer access technique for usage of the Thesaurus. The ERICTOOLS was a series of publications which the Facility prepared for use within the system, which were of interest to standing order customers involved with search operations. Representative of these publications were:

a. *Title Index*: containing a listing of all the titles in RIE, together with publication date, pagination, and ED number.

b. *Institutional Sources*: an alphabetic directory which listed, in alphabetical order, the names of all institutions by which documents in the system were indexed in each resume. A "statistics and postings" publication displayed all the documents (by ED number) which each listed organization had posted in the data base.

c. *Report/Project Number Index*: a list of all report numbers and OE or NIE project numbers for documents in RIE.

d. *Contract/Grant Number Index*: a handy reference for certain specialists to whom contract or grant numbers were important, in relation to specific document numbers.

e. *Clearinghouse Number to ED Number Cross-Reference List*: a special listing, mostly of interest to clearinghouses, but also to searchers interested in the cross-referencing aspect which the document offered.

Still another Facility publishing venture was the *ERIC Processing Manual*. This publication was subject to continuous updating and revision. Newly composed material was distributed by the Facility to manual users (mostly clearinghouses). Periodically, the manual was brought entirely up to date and republished.

4. State Assistance Program

Beginning about 1975, several of the state education agencies undertook the planning and development of computer based document central files, designed for storage and retrieval of their state publications. Central ERIC received requests from them for assistance in setting up files that would be compatible with ERIC. Compatibility would allow them to make one search of their file for state documents, RIE documents, and CIJE journal articles. Accordingly, Hoover provided funds to the Facility which would allow the computer and file experts to visit an interested state and provide their expert assistance. This project got off the ground at the beginning of 1978 and by mid-1979 the so-called "flying technical assistance team" had visited 10 states.

5. Optical Character Recognition

In simple terms, Optical Character Recognition (OCR) was a relatively new data transfer technique which conveyed information on a typewritten page directly onto computer tape. This technology was of extreme importance to the ERIC system, wherein the clearinghouses submitted data base entires on one form which was then keystroked for a second time for computer formatting. The project was initiated during 1977 and at the close of that year the Facility was soon handling all input from the clearinghouses, that is, by the OCR method. The entire process was not quite as simple as it sounded. The clearinghouses needed new typewriters (all standardized) and the Facility had to adjust its editorial change procedures. Also, there were a few bugs in the processing techniques which had to be eliminated. But OCR, by mid-1979, had proven very successful and was turning out to be more economical in terms of time and money than the previous double keystroking process.

6. Document Reproducibility Guidelines

A condition which plagued the ERIC system from the very first moment it began to provide microfiche and paper copy reproductions of the documents in RIE was reproduction quality. The documents collected for RIE were printed in every conceivable manner: partially illegible print, broken letters, extremely small printing, different colored paper stock, multicolored charts and graphs, photographs of great variety, outsided pages, and a host of other singular, peculiar variations which created a nightmare for the photographers at EDRS. Truly, this was a situation of "garbage in, garbage out" because the photographers could seldom reproduce an improvement over the original copy. Thus, it was at the input stage (primarily at the clearinghouses) where decisions of legibility had been made. The Facility, at the prompting of Central ERIC, collected all extant examples of poor quality documents and put together a collection of appropriate samples in the *Document Reproducibility Guidelines*. This the Facility dispatched to the clearinghouses in the latter days of 1978. Hopefully this manual of samples, along with textual notations, would eliminate those situations at the end of the information line where a user received a microfiche or hard copy of documents which was unreadable.

7. "Dynamic" Data Base

It has been characteristic of data base files that once they are reduced to computer format, they are not changed. They are more or less cast in concrete. The reason for this condition was that corrections required sophisticated computer programming as well as costly computer runs for correctional time. Not so with ERIC. The Facility accomplished the programming and the ERIC spirit for excellence prevailed, as long as the costs were in some reasonable range of rationality. The errors, incidentally, were introduced into the system in three principal ways:

(1) anomalies discovered in the course of preparing the cumulative semiannual indexes,

(2) errors discovered by clearinghouses or Facility staff when they read the printed version of RIE, or

(3) changes which the document source or a clearinghouse requested because new information became available or because an important circumstance about the publication was changed.

The Facility made correctional computer runs about every six months. Such changes numbered about 300-400 per year. Brandhorst has stated that ERIC, to his knowledge, was the only data base which took the time and trouble to correct the file in that manner. [31]

The foregoing represents only a brief description of the ERIC Facility, and probably too brief to represent its true value, true workload, or true significance to the ERIC system. But appropriate coverage would constitute far too large a space for the confines of this overall brief historical and operational narrative.

CHAPTER IX. INFORMATION SERVICES

Information Analysis

That ERIC was established as an information analysis center was not too surprising. Detailed planning for setting up the system occurred in 1965 when the famous Weinberg Report, which strongly promoted the analysis function of information systems, was fresh in the minds of all librarians and technical information people in Washington and, indeed, throughout the country.

Alvin Weinberg, chairman of the prestigious Panel on Science Information, and his group issued a report in January 1963, for the President's Science Advisory Committee which urged the formation of more and better specialized information centers and included analysis as one of the central functions. The following is an excerpt from this oft-quoted report:

> *"The centralized document depository is primarily a clearinghouse for documents; in general, it does not try to glean information from the documents it handles, but merely provides appropriate documents to users. But retrieval of documents is not the same as retrieval of information; a technical specialist really needs the information contained in the published literature, not the published literature itself. To retrieve information, as contrasted to documents, the technical community has devised the specialized data and information center.*
>
> *"A specialized information center makes it its business to know everything that is being published in a special field——such as nuclear spectroscopy or the thermophysical properties of chemical compounds; it collates and reviews the data, and provides its subscribers with regularly issued compilations, critical reviews, specialized bibliographies, and other such tools. Its input is the output of the central depository."* [1]

The step from science to education was an easy one in the minds of Central ERIC managers. They were aware of the increase in the number of documents in education and the difficult and frequently desperate task for each user to cull out the pertinent information from the vast stores available. A few years later, Lewis Branscomb gave a laconic, picturesque glimpse of this problem: *"It is just as absurd for the user to tap the total collection of raw material for his data as it would be for the jeweler to order six tons of gold-bearing ore when he wants to make a cuff link."* [2]

As indicated earlier in this volume, the first RFP to establish clearinghouses indicated that funds were available for state-of-the-art papers. During the early years of the ERIC system the definition for "information analysis products" (hereafter frequently referred to as "IAP's") was not too clear. The reasons for this were twofold: Burchinal and Central ERIC were not sure how this program would develop and, secondly, they did not want to bind the clearinghouses with absolute definitions so as to impose restrictions. Certainly bibliographies were at first included in the definition. Also, in many instances, both journal columns and newsletters were referred to in a sort of corollary category. This was understandable because many newsletters (both early products and those published later on) frequently contained both state-of-the-art type articles, as well as brief bibliographies. The journal articles often did the same thing in a somewhat more formalized manner.

The IAP activity, as might be suspected, did not develop quickly. When he published an overview of the ERIC system in June 1968, Burchinal commented on the growth of this phase of the system:

> *"In the first year of operation (mid-1966 to the latter part of 1967) most clearinghouses necessarily were absorbed in developing acquisition programs, establishing document processing procedures, developing technical competency in abstracting, indexing and inputting resumes. This phase is now past, the experience gained by the earlier clearinghouses has shortened this period and made it less traumatic for the second set of clearinghouses. Still, even at the outset of the ERIC program emphasis was placed on development of research review or 'state-of-the-art' papers, newsletters, bibliographies, and efforts to promote secondary dissemination of clearinghouse materials, including abstracts from Research in Education. Some clearinghouses have developed comprehensive information analysis programs; most, however, have been slow in this area. Information received in the Fall [1967] review sessions indicates that clearinghouse directors also recognize the lack of information analysis activities and are increasing these activities. Greater emphasis on production of information products is one of the top priorities in future steps for ERIC."* 3

In early 1969 ERIC published a list of IAP's which appeared between July 1967 and June 1968. Figure 25 on the following page is a statistical summary of all such work accomplished up to that time.

STATISTICAL SUMMARY

Type of Publication Clearinghouse	Bibliographies	Annotated Bibliographies	Review Papers	State of the Art Papers	Other	Total
Adult Education	–	22	1	–	1	24
Counseling and Personnel Services	–	5	–	–	–	5
Disadvantaged	1	–	3	2	–	6
Early Childhood Education	–	2	1	–	8	11
Educational Administration	5	–	1	–	–	6
Educational Facilities	1	–	–	–	–	1
Educational Media and Technology	–	4	3	–	–	7
Exceptional Children	14	–	–	–	–	14
Junior Colleges	3	1	10	–	1	15
Linguistics	2	–	–	–	–	2
Reading	1	12	3	–	–	16
Rural Education and Small Schools	2	1	4	2	1	10
Science Education	10	–	–	–	1	11
Teaching of English	–	2	1	–	–	3
Teaching of Foreign Languages	2	–	1	–	4	7
Vocational and Technical Education	–	2	–	–	9	11
TOTAL	41	51	28	4	25	149

FIGURE 25: ERIC PRODUCTS (1967-1968)

By June 1968, Burchinal was happy to note that 12 clearinghouses had already started publishing newsletters. These were being distributed to about 54,000 key local, state, and federal and professional organization staff members who were involved in the subject areas of the clearinghouses. Some of these newsletters appeared 3, 4, 8, 10, or even 24 times a year; others were issued whenever time and resources were available.

The journal columns were impressive vehicles of information dissemination, even in June 1968. Burchinal was pleased with the number of people contacted compared with other outreach activities.

> *"A much larger potential population of educators, close to 400,000, is reached by the regular columns featuring appropriate material from RIE, special ERIC collections, and clearinghouse files that are appearing in professional journals under arrangements with clearinghouses. Ten clearinghouses are responsible for preparing such columns in 21 journals or newsletters published by professional organizations. This type of journal dissemination provides high benefits at low cost. By becoming a channel for dissemination of current significant information, the journal is enhanced, and an existing communication channel is strengthened. The professional organization also benefits from its enhanced role in dissemination in its field. The ERIC program benefits as well by having a direct and inexpensive channel for reaching a large number of specialized professionals. Most importantly, though, specialists in education benefit by having new and important information about research developments or information about new programs brought directly to them at no additional cost, bother, or time investment on their part. By using journals as an already existing and functioning communication device, clearinghouses can build a very inexpensive SDI (Selective Dissemination of Information) program."*[4]

The journal columns differed widely and, of course, depended largely on the editorial taste of the journal itself. Some were just plain bibliographic listings; others featured a simple narrative introduction to a list of references or contained a critical analysis of one publication; and still others represented an annotated bibliography on a selected subject. Some of the columns appeared as regular journal features while others appeared now and then, as frequently as the clearinghouse could prepare them. In this way not only did ERIC provide good information service to people involved in education, but this procedure constantly kept ERIC in the eyes of the professional public. These and other arrangements allowed ERIC to claim that it had established regular columns in about 90 publications with readership totaling more than 550,000 teachers and administrators. [5]

Most of the clearinghouse directors were intensely interested in the IAP activity. They worked hard in coming up with interesting subject areas for coverage and contacted good researchers and good writers (hopefully both in one package) who prepared publications for their clearinghouses. Even the first publication of "ERIC Products" for the years 1967 and 1968 contained publications which appeared interesting and worthwhile. A few titles contained in this first listing were:

1. DeCrow, Roger
   "Adult Education in the United States"
   (seminar paper)

2. Hechlik, John E. and Lee, James L.
   "Small Group Work and Group Dynamics"
   (annotated bibliography)

3. Katz, Irwin
   "Problems and Directors of Research on Public School Desegretation"
   (state-of-the-art paper)

4. Hoke, Gordon
   "Involving Parents in Programs of Educational Reform"
   (review paper)

5. Smith, Stuart
   "Collective Negotiations in Education"
   (review paper)

6. Siebert, Fred S.
   "An Analysis of University Policy Statements on Instructional Recordings and Their Re-Use"
   (review paper)

7. Clearinghouse staff
   "Education of Gifted and Creative Children"
   (bibliography)

8. Hurlburt, Allan S.
   "The Preparation and Characteristics of Junior College Students"
   (review paper)

9. Teoh, Irene
"1966 Selected Bibliography in Linguistics and the Uncommonly Taught Languages"

10. Mangrum, Charles T.
"Vision and Reading Ability"
(review paper)

11. Smith, Marguerite
"English as a Second Language for Mexican Americans"
(state-of-the-art paper)

12. Clearinghouse staff
"Science and Society, History of Science Education, Science History, General Studies and Surveys"
(bibliography)

13. Petty, Walter, et al
"A Summary of Investigations Relating to the English Language Arts, Elementary and Secondary"
(review paper)

14. Brooks, Nelson
"Teaching Culture in the Foreign Language Classroom"
(review paper)

15. Garbin, Albeno P.
"Worker Adjustment: Youth in Transition from School to Work"
(annotated bibliography)

From the inception of the information analysis program, Central ERIC had provided relatively little guidance to the clearinghouses. What could the members of Central ERIC do? Only a few of them had much professional competence in education, and none of them was an expert in a specific clearinghouse subject area (except library science or educational media). So even if a Central ERIC member read an IAP and liked it, or pronounced it "good", that meant very little. The best evidence of quality, therefore, was the occasional book review or statement of a peer researcher which gave Central ERIC some appreciation of good, mediocre, or poor quality. After several years of this *laissez-faire* attitude, Central ERIC, as a group, became restive about the program. What impact was the IAP activity having on education? Were they really making a difference?

During early 1970 Central ERIC attempted to give more structure to the program. Each clearinghouse received an amendment of $5,000 to prepare an IAP planning document. The ERIC memo to the OE contracts office stated:

> *"The additional effort will require that the clearinghouse conduct a survey of the state of knowledge, emerging research trends, and related matters in the clearinghouse knowledge domain. On the basis of this survey the clearinghouse will develop a priority statement regarding interpretive activities, to be reviewed by an advisory panel of the clearinghouse's own choosing. The clearinghouse planning document will include a listing of its proposed priorities for information analysis in the following general categories:*
>
> *a. interpretive activities central to the clearinghouse mission and proposed for funding out of the regular budget;*
>
> *b. interpretive activities the clearinghouse should be prepared to undertake, given the availability of additional funds; and*
>
> *c. those desirable interpretive activities beyond the scope of interest or resources of the clearinghouse, but for which it can recommend qualified potential grantees or contractors."*

Central ERIC managers hoped that IAP's would be considered and supported on the basis of a rational process. One of the significant benefits of this procedure was the potential use of special clearinghouse competencies in OE-wide program planning and implementation. Another implication was the possibility for interpretive activities beyond those included in the regular clearinghouse budgets.[6]

In mid-1970 all these planning documents arrived in Central ERIC. As noted previously, neither Clemens nor Burchinal felt that the exercise was a particularly good one. The results did not meet their expectations. The project was not a complete waste, however, because each clearinghouse derived a considerable amount of experience from and the benefit of the expertise of the scholars and subject experts they had contacted relative to the state of the art in their particular subject area.

That gambit did not work out well, so Central ERIC decided to try another approach. In September 1971, Central ERIC sent the directors a set of specifications for IAP's. The overall goals of the specifications were to provide a more concerted direction and more practice-related substance to

IAP's. The preliminary statement added: *To reach these goals, Central ERIC encourages ERIC clearinghouses to develop full-scale publications with an in-depth approach toward a specific subject in the field of education".*

Central ERIC had two types of projects in mind: those oriented toward OE objectives and those termed "bull's eye projects" (intended to be even more pinpointed than "targeted" projects). The first type of projects could be monographs, state-of-the-art papers, reviews, analysis papers, workshop compendiums, or other similar publications which related to the 1971-72 objectives of OE, which were to:

"a. *Develop and test a school-based, an employer-based, and a home-based career education model as alternatives to current educational practice.*

b. *Target financial and technical assistance to meet the special needs of the disadvantaged.*

c. *Strengthen and enlarge education for the handicapped.*

d. *Accomplish the second-year activities of the ten-year plan to end functional illiteracy through the Right to Read.*

e. *Promote racial integration.*

f. *Prepare to implement education special revenue sharing.*

g. *Promote alternatives to and improvements in existing forms of education through Innovation".*

The second type of project, the bull's-eye, could be related to any educational subject which resulted in setting the stage for innovation, change, or adoption and which could be determined to have a tangible effect on students, teachers, administrators, or on the programs of any school or school system. Because this was vague, a specific hypothetical example was included in the specifications.

> *"The Clearinghouse on Social Studies/Social Science Education may contact the State Superintendent of Schools in Colorado who agrees that the preparation of a publication to be entitled 'Political Games for High School Social Studies Classes' might have interesting possibilities. Hopefully an adjunct to Social Studies textbooks, this publication would be a guide for adapting League of Women Voters' information to classroom game playing situations for prospective*

18-year old voters. The clearinghouse would prepare or commission the preparation of the publication and submit it to the State Superintendent for possible recommendation or adoption by local school districts. The State Superintendent would be obligated to notify the Clearinghouse as to the final outcome of the project."

The clearinghouses were to prepare "miniproposals" which would be evaluated by readers in OE and funded accordingly.[7] Central ERIC hoped that the spirit of competition for funds and the specific direction of the project would lead to a significant number of outstanding IAP's.

Unfortunately, this project became entangled in a web of funding perplexities during the transfer of ERIC to NIE. Yes, the clearinghouse did submit proposals. Yes, the proposals were evaluated. Yes, some of them were funded. But then NIE management asked Central ERIC to hold up the process before the entire action was completed. Most of the available money was placed in "escrow." However, all clearinghouses did receive support for some portion of their IAP work, on a prorated basis. The point was that NIE officials were uncertain of the exact position of ERIC in NIE and as a part of their uncertainties about ERIC, they wanted to take a look at the validity of the IAP effort.

During the entire year of 1972, Burchinal, Clemens, and Hoover held discussions to reexamine the IAP program. What changes could be made to the activity so as to offer a more valid program? Should the products have a tighter system of review and approval? Should they be published in a different manner? Should all the products be placed on the market so as to recoup some of the money invested in them? One of the recurring problems faced by Hoover and his staff was the allocation of money to clearinghouses once project approval was obtained. This allocation potential continually shifted because the clearinghouse contracts expired at different times throughout the year. It was a manager's nightmare. All kinds of questions and no answers. Finally, in May 1973, all the escrow money was released and Central ERIC scrambled to get the money to the clearinghouses as quickly as possible.[8] The NIE influence on the program turned out to be very limited. In fact, the only change was the new requirement that each clearinghouse carry a disclaimer notice in their publications which included the statement that the document, prior to publication, had been submitted to a professional organization "... *for critical review and determination of professional competence.*" [9]

Evaluation of the miniproposal effort for information analysis efforts was difficult. It was such a long, drawn-out affair. So much of the activity was involved in peripheral planning, budgetary manipulations, and side issues that no real internal evaluation was attempted. Also, it will be recalled that the first couple of years of ERIC in NIE were filled with shifting concerns about eliminating, combining, and changing clearinghouses. These years and succeeding years were filled with desperate concerns about NIE and ERIC's budget levels. It was clear in everyone's mind that any type of miniproposal effort for IAP's required a stable organization and funding pattern. Thus, the miniproposal operation was discontinued and ERIC managers reverted to the previous methodology of having clearinghouses include IAP plans in the normal continuation or competitive proposals, whichever applied.

Meanwhile, the information analysis products had been already under formal examination to determine their quality and utility. This study occurred during the period between July 1971 and June 1972; however, the documents used for the study did not include any of the miniproposal variety. The study project received funding support from the OE Office of Planning and Evaluation and covered various products of NCEC (Burchinal's National Center for Educational Communication).* The corporate entity responsible for the activity was the System Development Corporation, the Education and Library Systems Department of which was located in Falls Church, Virignia. Judith Wanger was the project director and William J. Paisley, of Stanford's University's Institute for Communication Research, was the principal consultant. The entire project was under the general direction of Carlos A. Cuadra, manager of the Falls Church Department. All three had excellent backgrounds and qualifications.

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*Other than IAP documents, the study also included products of PREP (Putting Research into Educational Practice) as well as products of the EMC (Educational Materials Center), both under Burchinal's direction.

Study methodology was primarily the preparation and completion of a questionnaire which asked a selected group of respondents to answer questions about both the quality and utility of information analysis products. The entire study was quite detailed and contained questions relating to the following categories:

> "1. *Treatment of Subject*
>
> - *Selection of Content/Material and Coverage*
> - *Length of Document and Number of References*
> - *Choice of References*
> - *Discussion and Interpretation*
>
> 2. *Up-to-Dateness*
> 3. *Organization and Clarity of Writing*
> 4. *Format*
> 5. *Choice of Author and Accuracy in Reporting.*" [10]

Another series of questions contained data about utility. The study results were accumulated in numerous bar graphs and tables. However, anyone who inspected them would agree that the SDC conclusion that:

> *"This study has demonstrated that NCEC products are——in varying degrees——known and read and that on the whole, they are favorably received by the respondent populations. It has also shown, however, that the products are under-utilized, in part because of lack of awareness of the products' existence and in part because of the belief that the products are not readily accessible."*

Accordingly, the SDC team further stated:

> *"In conjunction with the strong evidence that the products actually used are meeting important needs and that the potential value to present non-readers and non-users is great, these findings suggest that: An improved alerting announcement system——perhaps even a selective dissemination of information (SDI) system——needs to be improved and/or an intensified education program of how to obtain products needs to be developed."* [11]

By mid-1979, most of the people in Central ERIC, the clearinghouse directors, and impartial ERIC observers would agree that the quality of information analysis products had improved. That proposition was purely speculative, of course, without reference to any type of study similar to SDC's. But it was probably true. Unfortunately, the same cannot be said with equal certainty for the utility of the IAP's. Although some small increased amount of announcement, publicity, or awareness was accomplished through professional journals, workshops, professional meetings, clearinghouse newsletters, and other communication channels, the net result had not approached a satisfactory solution as outlined in the SDC recommendations. In fact, even by mid-1979 there was still that very tried, but true, feeling among Central ERIC managers that *"information analysis products are among our very best kept secrets."*

One promising publication venture, which would have been an excellent vehicle for IAP items, did not actually prove successful. That was with the Capitol Publications, Inc., the organization well known for its publication of a string of newsletters on a national scale, including the well known *Education Daily*. The publisher, Kenneth Calloway, proposed to ERIC that he publish certain selected IAP's in an attempt to capture some segment of the "thin market" of educational materials. Calloway did, in fact, publish several clearinghouse products, beginning in 1973; yet the venture did not prove profitable, so Calloway dropped out of the IAP picture.

There was no question that the totality of the ERIC IAP program was very impressive. A considerable amount of money was devoted to it; approximately one-third of each clearinghouse's total budget was spent for this effort. The most recent cumulation of IAP publications appeared in December 1978 and contained a listing of all products published during FY 76, 77, and 78 (through December 1977). Figure 26 shows a statistical summary of the total IAP publication effort, going all the way back to FY 1968.

An interesting aspect of the IAP program was the large diversity of publication techniques, i.e., every way possible or imaginable. The clearinghouses used every publication procedure from multilith and a

STATISTICAL SUMMARY—*BY CLEARINGHOUSE BY YEAR (1968-1979)*

IDENTI-FYING PREFIX	CLEARINGHOUSE NAME	FY1968	FY1969	FY1970	FY1971	FY1972	FY1973	FY1974-1975	FY1976, FY1977, FY1978 THROUGH DEC. 1977	JAN-DEC 1978	JAN-DEC 1979	TOTALS
AC	Adult Education	24	16	20	28	20	16					124
AL	Linguistics	2	7	11	11							31
CE	Adult, Career, & Vocational Education							6	36	9	12	63
CG	Counseling and Personnel Services	5	8	19	22	16	15	13	22	16	12	148
CS	Reading and Communication Skills						60	38	46	13	8	165
EA	Educational Management	6	8	14	36	18	43	62	78	19	14	298
EC	Handicapped and Gifted Children	14	11	53	68	106	57	57	5	4	5	380
EF	Educational Facilities	1	19	16								36
EM	Educational Media and Technology	7	8	11	8	14	16					64
FL	Languages and Linguistics	7	27	29	16	16	12	27	26	16	10	186
HE	Higher Education		1	8	18	18	17	35	45	16	17	175
IR	Information Resources							30	47	8	12	97
JC	Junior Colleges	15	21	17	28	26	19	57	61	17	13	272
LI	Library and Information Sciences		2	7	9	14	8					40
PS	Elementary & Early Childhood Education	11	12	7	15	21	26	41	40	15	6	194
RC	Rural Education and Small Schools	10	18	13	23	9	9	30	23	13	8	156
RE	Reading	16	19	15	9	5						64
SE	Science, Mathematics, and Environmental Education	11	17	22	28	13	30	53	46	28	10	258
SO	Social Studies/Social Science Education				6	10	6	17	24	6	8	77
SP	Teacher Education		7	28	19	19	19	31	31	9	7	170
TE	Teaching of English	3	7	32	24	26						92
TM	Tests, Measurement, and Evaluation				1	12	11	19	33	6	5	87
UD	Urban Education	6	14	14	10	10	14	18	37	16	12	151
VT	Vocational and Technical Education	11	18	30	39	42	18	—	—	—	—	158
	TOTALS	149	240	366	416	415	396	534	600	211	159	3486

FIGURE 26: ERIC CLEARINGHOUSE INFORMATION ANALYSIS PRODUCTS

hand stapling machine to typesetting and hardback binding in a commercial printing plant. In between were Xerox copying, local small printing presses, university presses, the Government Printing Office, commercial presses, and probably several others. In some cases, the clearinghouse paid for printing and distribution; in other cases, the university presses or professional organizations picked up the tab, or perhaps a part of it. Some of the products were distributed free; others were sold by university, professional, or commercial organizations. Once the copies were slated for RIE, the document entered the public domain and could be printed in whatever manner or according to whatever arrangements the clearinghouses could make which appeared most advantageous or most expeditious.

Because of the multiplicity of publication and distribution techniques, only one specific clearinghouse (the Clearinghouse on Higher Education) should be described in any detail. Its technique was a particulary good one and displayed a most happy cooperative enterprise between a clearinghouse and a professional organization, in this case, the American Association for Higher Education (AAHE). Clearinghouse and association discussions during 1972 led to the creation of two literature analysis series:

- a short paper series, the "AAHE-ERIC/Higher Education Research Currents," disseminated through the AAHE monthly *Bulletin* to its 9,000 members; and
- a Monographic series, entitled the "AAHE-ERIC/Higher Education Research Reports", which appeared 10 times each year and were sold by subscription or individual title.

Both series started in 1972. By mid-1979 more than 70 research reports and 56 "Research Currents" had been published. Publication of the latter has remained about at the 9,000 level because of the stable association membership. However, the first-run printing of the research reports has grown from 1,000 to 3,500; also several of these reports have gone into second printings. Titles of some of the research reports best sellers were:

1. *Accountability in Higher Education*, Number 1, 1972, Kenneth P. Mortimer, Director, Center for the Study of Higher Education, Penn State University.

2. *Goals for Higher Education: Definitions and Discussions*, Number 6, 1973, David A. Trivett, Research Associate, ERIC Clearinghouse on Higher Education.

3. *Faculty Workload: Facts, Myths, Commentary*, Number 6, 1974, Harold E. Yuker, Director, Center for the Study of Higher Education, Hofstra University.

4. *Rationales for Experiential Education*, November 3, 1975, Robert F. Sexton and Richard A. Ungerer, Georgetown University.

5. *Enrollment Trends In Higher Education*, Number 6, 1976, Carol H. Shulman, Research Associate, ERIC Clearinghouse on Higher Education.

6. *Higher Education Opportunity: A Decade of Progress*, Number 3, 1977, Larry L. Leslie, Center for the Study of Higher Education, University of Arizona.

7. *Tenure and Termination in Financial Exigency*, Number 3, 1978, Marjorie C. Mix, State University of New York at Buffalo.

Jonathan Fife, Director of the Clearinghouse on Higher Education, described the annual publication process, as follows:

> *"The selection of topics and authors by the Clearinghouse takes over six months. In December a call is issued for proposals to author a research report, which appears in various associations' newsletters, and is simultaneously announced to more than 3,500 individuals who have been identified by the Clearinghouse as being concerned with the study of higher education. Once the proposals are received, they are reviewed to see that they do not duplicate recent or in-progress Clearinghouse publications. The remaining proposals are grouped according to basic categories and then submitted to several review panels to be ranked according to importance of the topic, the quality of the proposal, and the ability of the author to accomplish the task.*
>
> *"In May, 25 topics are submitted to the National Board of Advisors for final review and acceptance. Only after this process has taken place are the topics and authors included in the Clearinghouse's annual proposal to the National Institute of Education. Upon approval, the authors are contacted, manuscript deadlines dates are set, and the authors are sent a publication guide and a computer search of their topic from the ERIC system. When a manuscript is received, it is reviewed by two professional staff members of the Clearinghouse. If there is doubt about the quality of the paper, it is sent to outside readers for review and then back to the author for revisions. If it is*

> *conceptually acceptable, it is turned over to the Clearinghouse editor for final review and copy editing. Only after this type of careful scrutiny is the manuscript forwarded to AAHE for publication.*
>
> *The end result of this collaboration between an NIE-funded clearinghouse and a nonprofit education organization has been the production of two state-of-the-art series that have received national recognition and praise. It also demonstrates a unique blend of public and private funds working together on the common goal of improving decisionmaking in education."* 12

User Services

In the beginning, when Haswell created ERIC and Burchinal created the ERIC system, it became evident that the system was ordained to be more of a wholesale than a retail operation. This was clearly evident in managerial meetings, both within Central ERIC and in the meetings with directors. The basic intention was to create the data base and allow the library community to acquire that data base and use it; to create information analysis products and sell them or distribute them to the using public. That was the intention; yet almost immediately Central ERIC found the real life situation not that simple. For in the mere advertisement of ERIC through newsletters, professional meetings, the publication of RIE, and the document acquisition contacts, the demand for user services inevitably occurred.

Central ERIC agonized about user services, tried to hold to its managerial inclination, but found it difficult. The conflict was apparent, for example, at a meeting of the directors during November 1967:

> *"The general subject of how much individualized service ERIC Clearinghouses should give and to whom is a very complex one. On the one hand, we want the ERIC Program to be as service oriented as possible to the whole professional community and the individuals of which it is composed. On the other hand, there is the problem of the high unit cost per unit output product when this service is performed for an individual on an ad hoc basis. The question of whether Clearinghouses should charge and at what level adds further complexity to the already difficult one. It is becoming abundantly clear that in spite of what we would like to do in the way of personalized services, the ERIC budget now, and for some time to come, mitigates against individualized output products on a grand scale. ERIC clearinghouses will of necessity have to develop 'shelf-type'*

> *documentary products which can be used in responding to questions with very little expenditures of staff effort. Admittedly, this is neither the kind of response which we would like to provide nor one which is of maximum use to the asker of the question. On the other hand, with this attitude, ERIC may be able to handle relatively large numbers of questions with a relatively small investment in staff."* [13]

Central ERIC never, however, imposed an absolute ban on user services. That, of course, was impossible. At another directors' meeting, soon afterwards, the long winded statement above was reduced to one that made the "policy" at least a bit more clear:

> *"Each clearinghouse can best judge how to keep services and the clearinghouse resources in balance with priorities and overall budgets. Every effort should be made to acquaint the public with how to use the ERIC products and tools which are available through GPO or other publicly accessible organizations."* [14]

During all the annual review sessions, particularly during the period 1967 through 1972, or thereabouts, Central ERIC managers continually asked pointed questions about the number of user services, their unit costs, and methods the clearinghouses were using to devise low-cost responses to questions they received. It was at that period that the directors and their staffs really sharpened their question-answering techniques with form letters, "canned" responses to similar or identical queries, and bibliographies which could at least respond to those questions which were phrased: "Where can I find some information about" this or that specific subject.

But from the very beginning of the existence of the clearinghouses the flow of questions could not be turned off, could not be ignored. The clearinghouse directors, on the firing line of exposure to the educational public, could not refuse telephone requests for information and naturally felt obligated to respond to letter inquiries. And gradually, somewhat reluctantly, Central ERIC shifted its position on user services from one of discouragement to reluctant acceptance, and finally to mild encouragement. The statistics clearly reflected these attitudinal changes. In 1968, all clearinghouses responded to a total of about 30,000 questions; in 1970 this figure jumped to 56,000, in 1971 it climbed steeply to 80,000; and by 1975 it had reached nearly 100,000 per year. At his latter point, it leveled off and "about 100,000" questions received and answered annually was the ballpark figure which ERIC continued to use for a numerical expression of its annual question-answering workload. Another significant system activity, heavily involved in question-answering activities, with emphasis on the referral technique, was the reference library located in the ERIC Facility. Dorothy A. Slawsky, who headed this activity, built up a service function which, at mid-1979, was responding to about 15,000 questions per year.[5]

Another significant number of questions came directly to Central ERIC. They came from all sources but the more significant were from other government agencies or Congressional offices. Sometimes from the White House staff. Frank Bryars, who was very familiar with the Washington bureaucracy, including Capitol Hill, was very adept at providing answers, the right document, or the telephone number of a specific person for the questioner to contact. Bryars was a good "answer man" and had the patience to track down answers in the best spirit of a reference librarian.

The large variety of the questioners, from every possible occupation in education or peripheral interest plus the universiality of the type of questions, made it difficult to describe or characterize the type of information which people asked for from any of the sources in the ERIC system. Many, many people, of course, were merely those users who dutifully checked the volumes of RIE, selected one or two ED numbers, walked over to the microfiche cabinets, found the appropriate microfiche, sat down in front of the microfiche reader, and found out what they wanted to know. That was the pattern that ERIC managers had hoped all users would follow: the perfect "wholesale" situation; no intermediary services. But then there was that innocent questioner who asked someone at a clearinghouse for "all the information you have on vocational education." Or the neophyte who wanted a copy of a Russian educational publication, in the original Russian, which was published a month previously. Or, more typically, there was the individual who called a clearinghouse and requested, by correct title and complete author's name, the IAP product which was announced in the last issue of the clearinghouse newsletter. Or, there was the person who wanted the ED number of a specific document so that it could be ordered from EDRS. Or, there were a thousand variations and extensions of any general type of question anyone could think of. ERIC was a great source of information for the teacher, the administrator, any educational practitioner.

But for the researcher, the person writing a master's thesis or doctoral dissertation, it was an absolute must. In fact, any graduate student in education who was not properly versed in the ERIC system was indeed in dire straits. Graduate students simply had to know about ERIC.

But what difference did ERIC make? How did it change or affect the educational process? Specifically, how? In anticipation of such a question, all clearinghouses and the people in Central ERIC tried to collect some of the information stories which typified, in an idealized manner, the impact of ERIC. Brandhorst, of the ERIC Facility, in an article he wrote for the *Phi Delta Kappan*, described two "case studies" he had collected which showed the kind of consummate, benign influence everyone in ERIC hoped for:

1. *"The Curriculum Committee of the Cupertino (California) School District asked one of its members, a sixth-grade math teacher, to find some effective and innovative ways of teaching elementary shcool students the metric system. After going through the card catalogue of the Cupertino Public Library, the teacher went to the reference librarian to see if she could suggest any further sources. Since the Cupertino Public Library is equipped to do computer searches of the ERIC data base, the librarian suggested a search to uncover citations for research papers and curriculum guides that would not normally be housed in a public library or be available from a bookstore. The search turned up 50 document citations on methods of teaching the metric system in elementary schools, some of them bibliographies. The teacher was able to read the document that interested him in the library's ERIC microfiche collection. He brought 12 of these documents to the committee's attention as discussions of possible guidelines to be used in revising the math curriculum".*

2. *"A health education teacher in Columbus, Ohio, concerned about the growing abuse of alcohol among high school students, visited the ERIC clearinghouse at Ohio State University to find names of recent films on teenage alcoholism. She did a manual search of ERIC, using RIE's from 1974 to present. A new descriptor in the ERIC system, "Filmographies", and the descriptor "Alcohol Education" proved particularly useful. The teacher found three documents which listed films specifically dealing with teenage alcoholism, along with their distributors and prices. She planned to integrate at least two of the films into her lesson plans for the next year. She made copies of the lists and showed them to interested colleagues"*[16].

Revolving Funds

During discussions about budgeting for question-answering activities and information analysis products, Burchinal, Marron, and the ERIC staff discussed the possibility of charging ERIC's clientele for such services or products. Therefore, they made contact with the OE contracts office and found out, to their dismay, that they could not do it. So for several years the only kind of commercial arrangement the clearinghouses could make was, for example, to have their information analysis products printed at the university presses or even commercial presses and have them pay for the printing and collect money from the sale of the documents. But this maneuver only benefited the clearinghouse by eliminating the printing costs. The clearinghouse itself could not collect or use the money.

During late 1973 and early 1974, when ERIC had become a part of NIE, Hoover discussed this matter with NIE contract officials and found them more receptive to the idea. Give us a draft of your ideas, the contracts office said, and we'll discuss them. Trester did so, and after a few brief discussions and alterations of words, the policy was set.

The basic concept for selling products and services was based on revolving funds and was in concert with NIE legislation for the dissemination of research materials. The policy would allow the clearinghouses, within certain guidelines, to propose exactly how they wanted to handle the function, and specific procedures would be set forth in each individual clearinghouse contract. The revolving funds would be used according to the following guidelines:

> "a. *A contract provision authorizing use of a revolving fund would clearly set forth procedures for collecting such charges and reporting them to NIE as well as disposition of income, if any, accruing from a fund's activities.*
>
> b. *Materials reproduced and disseminated, for which charges are made, must be in concert with scope of work provisions of the contract.*
>
> c. *The Contractor would submit a proposal containing a price list rationale as well as the steps to be taken to comply with the administrative requirements of NIE*".

The clearinghouses would be obligated to employ acceptable accounting methods in their management of the revolving funds, they would have to maintain accurate inventories, and they could establish prices which reflected complimentary copies, obsolete inventory, and uncollectible accounts. *"Although the net amount in a revolving fund may vary, the fund will be so managed over time so as to incur no loss but to earn no profit".* Thus, the clearinghouses could request a few thousand dollars, depending on their operational plan, which would form the parameters with which to operate the revolving fund.

Then came the payoff part of the plans. The revolving fund could underwrite the following types of clearinghouse expenses:

"a. All costs associated with printing and duplication.

b. Actual purchase price of material to be disseminated.

c. Copying costs such as Xerox copies, microfiche-to-hard copy reproductions, and microfiche-to-microfiche prints.

d. Salaries and wages for staff members whose activities include receiving, filling orders, bookkeeping, and packaging.

e. Supplies and materials related to printing, copying and distribution activities"[17].

During 1974 several clearinghouses established revolving fund accounts on an experimental basis. The arrangements appeared satisfactory and in the following years most, but not all, of the clearinghouses followed suit.

Computer Searching

Certainly one of the most significant and decisive discussions at a clearinghouse directors' meeting took place on May 8, 1967. Previous to that meeting one of the directors had inquired about the possibility of acquiring Termatrex equipment for file searching purposes. Central ERIC took a stand, made a policy announcement. Marron stated that Central ERIC did not want the system to invest any more money than it already had in Termatrex for the following reasons:

"(1) On-line computer input-output capability via tele-communications is not as far off as had been originally anticipated when the decision was made to purchase Termatrex equipment;

> 2. *Termatrex equipment by and large is limited to files of some 10,000 items and less, and*
>
> 3. *When the time came to convert files from Termatrex to computer there would undoubtedly be much lost motion."*

Those clearinghouses, Marron went on, who had already acquired the Termatrex should, of course, continue to use it. Furthermore, they should investigate the possibilities of, and test their equipment for, utilization of local clearinghouse mechanized file management techniques. Perhaps, in that way, the equipment would not be a total loss with the advent of computer searching. [18]

But more than a year later, by September 1968, computer searching on ERIC tapes was not yet a practicality; even the sequence of events was not yet solidified. Marron talked about the status quo at the September 16-18, 1968 directors' meeting. He explained that Central ERIC had received a large number of inquiries about tape availability from many organizations as well as several clearinghouses. He said:

> *"Until recently, ERIC tapes were usable only with IBM 7010 computer equipment. Thus their general utility was somewhat limited. During the last year ERIC has converted the tapes into a format which can be run on the IBM 360 series computer. These tapes will soon be available for dissemination and use at the local level. However, some problems still remain to be worked out."*

The problems he referred to were mainly two-fold. The first was documentation which described the magnetic tape record format. This had not yet been prepared. Secondly, consultative services had to be made available for those who wanted to set up the file and run it. No matter how sophisticated the user installation might be, they would encounter a myriad of problems trying to feed the correct commands into their computer to run the ERIC searches. Marron had not yet investigated the sources for such consultant activities or how much they might cost. [19]

It was in 1969 that the ERIC computer searching capability really started to get on track. Significant computer events in ERIC occurred in rapid-fire order. First, effective January 1, ERIC signed a contract with the Lockheed Palo Alto Research Laboratory for the design, programming, and implementation of a software package which would allow persons with little or no computer orientation to obtain data from a large data base. The configuration of the system was to be widely decentralized, real-time, and with a strong emphasis on user orientation. Prime mover for this Lockheed contract was Roger K. Summit, who had an extensive background in computer technology.[20]

One of the ERIC clearinghouses was in a position to gain some preliminary and test experience in the on-line computer mode. As clearinghouse director William Paisley explained it:

> *"Through a fortunate circumstance of a prior contract of NASA with the Lockheed Corporation, ERIC was able to arrange for the use of the Lockheed Dialog System with a terminal at the ERIC Clearinghouse on Educational Media and Technology at Stanford tied in to the Lockheed computer located at the company's R&D Center in Palo Alto."*

Further describing the installation, Paisley explained that:

> *"The use of the on-line system was very impressive, particularly to the visitors from the educational community. Various advantages were immediately apparent. Use of the equipment was relatively simple, and users were quickly able to submit queries to the computer. Also impressive was the ready availability of speedy bibliographic printouts. A phenomenal savings in staff time was apparent—particularly in the routine tasks such as duplicate searching, etc. Disadvantages or weaknesses are due to the literal nature of the computer system. This underscores the importance of consistency of input among the clearinghouses. Also, output format is not user oriented. Another drawback is the cost of the telephone line for the transmittal of the data."*

Hardware costs were about $750 per month; telephone bills ran about $700 per month.[21]

The Clearinghouse on Teacher Education, meanwhile, pursued another ERIC computer tack. Under test at that clearinghouse was a software package which Central ERIC had asked the Computer Resources Corporation to prepare. Joost Yff, of that clearinghouse, reported that the experiment he conducted tried to determine if personnel unsophisticated in computer technology could take such a program with its instructions, and actually use it to make valid searches.

> *"Not only were the instructions readily absorbed in short order, but with relatively little study searches were able to be structured. Dr. Yff indicated that his conclusions from the experiment were that the speed and efficiency of the computer had the potential of greatly reducing man hours of work in routine tasks such as duplicate searching. It also can be used for bib building, maintenance, and searching. Further, it is not necessary to have a computer expert to do the queries, and not much expertise is required to run the system."* 22

This latter experience gave Central ERIC management some encouragement to make the ERIC tapes available to anyone who wanted them. It was the so-called "tape lending program" which began in early 1969. Two copies of the tape were available for sending to organizations which could make free copies of them and then transfer them to the next customer. Applications had to be made to Central ERIC because the applicant had to meet certain conditions prescribed to insure that the tapes could be used properly. This procedure continued throughout 1969; however, the program soon became too bothersome and burdensome. As more and more institutions became interested, more tapes had to be made available for lending. Problems arose: tapes were not returned on the date promised; tapes were destroyed in the mail; a copier could unwittingly erase the tape or a portion of it; and then entered the dilemma of updates. The same procedures would have to be repeated.

The entire tape lending program thus became too frustrating and Central ERIC decided to change the procedure. Leasco had won the ERIC Facility contract, effective January 1, 1970, and it was to that company which ERIC turned. Leasco created a tape sales activity, a sort of non-profit service to ERIC users. Leasco offered tape copies of the data base according to two options:

Option 1: a high quality tape copy, which could be retained, for $80.

Option 2: the user supplied a tape on which the data base was imprinted, for a cost of $50.

This proved to be much more satisfactory than the lending program. During the 1970's this ERIC Facility tape sales program attempted to satisfy all reasonable expectations or interest for all positions of the data base as well as most types of computer. For example, the Facility's brochure, in 1979, stated:

> *"The files are sold on 9-track tape reels (600-, 1200-, or 2400-foot, as appropriate), at packing densities of either 800 or 1600 BPI. Except for the MARC II formats, the tapes are unlabeled, in IBM 360 Operating Systems (OS) format in EBCDIC code. Both UPPER CASE ONLY and UPPER AND LOWER CASE character sets are offered. The MARC II format tapes are available blocked (one block equals one record) with a maximum block size of 2048 bytes, in ASC 11 code with standard MARC II header labels and trailer label".*

Some of the files were available on a monthly, quarterly, and annual updating schedule[24]. In addition, many of the tape users were interested in obtaining the ERICTOOLS publications, which the clearinghouses used for processing publications for RIE and CIJE, but which many of the computer searching installations wanted to have on hand for sophisticated searching problems.

Beyond the ERICTAPES and ERICTOOLS service, the Facility also became involved in providing additional services for those interested in computer searching. For example, the publication of the *Interchange*, mentioned earlier, was begun, as well as the publication of the *Directory of ERIC Microfiche Collections* and the *Directory of ERIC Data Base Search Services*, the latter being a detailed listing of those computer installations offering searches and pertinent information about those services. Beyond this, the Facility began to make all arrangements for the ERIC Data Base Users Conference. These were annual affairs held throughout the country, the first of which took place in Arlington, Virginia in March 1972, followed by another at Downington, Pennsylvania in September, and yearly thereafter.

Meanwhile, another activity was in progress which gave significant impetus to the practicality and utility of the on-line searching capability. In March 1970, Burchinal had established the Educational Reference Center as a part of his new Office of Information Dissemination. Frank Bryars, of the ERIC staff, was assigned to ERC, as well as Charles Missar, who had previously directed the ERIC Reading Room. Later on, ERC was headed by Charles F. Haughey and then later Missar.* The purpose of the Center was to serve as a reference center for all OE staff members, but its equally important job was to conduct searches in the on-line mode with a hook-up to Lockheed and to evaluate Lockheed's DIALOG system in an operational setting[25]. Missar, an experienced professional librarian and a person intimately knowledgeable about ERIC and the data base, made a significant contribution in working to get the bugs out of the DIALOG program and making it an effective searching service. The Center was first located on the first floor of OE at 400 Maryland Avenue. Then under NIE it moved next door to the NIE Library, near the corner of 19th and M Streets.

After 1970, both batch searching (QUERY) and on-line mode began to spread throughout the country. In 1971, another on-line service ORBIT, was being offered by the System Development Corporation[26]. The latter company began operating on-line services in 1965 and in 1971 had placed the entire ERIC file on-line as part of its nationwide service[27]. By July 1970 there was a total of 58 ERIC tape users; by February 1971 this number had increased to 100[28]. One organization which became deeply involved in computer searching was the Northern Colorado Educational Board of Cooperative Services, in Boulder, Colorado. ERIC had negotiated a small contract with this organization to experiment with making computer searches available on a regional basis, which included 6 or later 10 western states. This organization had, for example, supplied 1,000 computer-generated responses in one month to educational practitioners. The availability of one-line hook-ups greatly swelled the number of organizations throughout the country (and later, even in foreign countries) which had purchased or rented terminals on which to conduct ERIC searches. By the end of 1975 there was a total of over 500 organizations which, through offering one kind of search or another, could do computer searches of the data base[29]. The principal software systems which supplied an on-line capability, in mid-1979, were BRS, DIALOG, ORBIT, STAIRS, WISE-ONE, and PIRETS[30]. In 1979, ERIC could not ascertain the precise number of total on-line installations because the services were highly competitive and did not wish to reveal their operating volume.

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*By mid-1979, Missar had become head of the NIE Library and William L. Higgins became the head of ERC.

Soon after becoming head of ERIC, Hoover became vitally interested in having all clearinghouses equipped with computer searching capabilities. Some of them jumped into this activity quickly, even doing experimental work. Some of them had such installations immediately available at university computer centers, particularly the QUERY batch mode arrangement. Hoover preferred all of them to set up on-line, to act as leaders in the on-line movement, and to have personnel who were familiar with the technique. Also, he was firmly convinced that most indexers should perform computer searches so as to be aware of the special techniques and habits relating to computer retrieval. Finally, by 1978, most of the clearinghouses had an on-line capability, with keyboards located in the clearinghouses themselves and all had access to a terminal.

Public Relations

In the preceding pages there have been several references to newsletters, journal columns, professional meetings, and contacts with professional societies as methods by which ERIC made contact with its public. But there was another group of activities which was more than an outside group; in fact, they could be considered to be members of the ERIC family: the standing order customers who purchased all of the ERIC microfiche from EDRS. Hoover felt that he wanted to do something for these organizations, or at least provide some liaison in order to tie them in closer to the ERIC system. He was not quite sure what to do, so asked the Clearinghouse on Tests, Measurement, and Evaluation, in Princeton, New Jersey, to contact the nearby standing order customers to see how they operated and what kind of help they needed, if any. A study of this activity, under the leadership of the associate director, Eleanor V. Horne, provided the basis for future system-wide attention to the standing order customers.

At the technical meeting in Columbia, Maryland, during December 1974, the standing order customers relations were further discussed. As a result of those discussions, Hoover decided that the 530 or more standing order customers should be divided among the clearinghouses and invited to attend workshops, with ERIC paying their travel and per diem costs. Accordingly, in the summer of 1975 contracts were arranged with seven of the clearinghouses (who acted as fiscal agents for the others), and the workshops were held in the late summer and fall. These were informal sessions, usually lasting a day and a half or two days. The meetings consisted of a thorough discussion and description of the ERIC system and its functions, with primary emphasis on user services, including demonstration of computer searching techniques. The reactions were excellent, according to the reports from all clearinghouses[31]. As a result, the process was repeated in the fall of 1978, this time with the addition of an agenda which allowed the standing order customers to relate some of their experience[32]. The clearinghouses also reported these meetings as very successful and valuable to both parties.

Aside from outright high pressure salesmanship or the techniques of a commercial organization, ERIC was consciously attempting to make the using educational public aware of its existence, its services, and its usefulness. And it planned to continue to do so. For example, the schedule for Fiscal Year 1979 (ending on September 30) was as follows:

1. Clearinghouse personnel would attend 137 major association meetings (out of a potential 180) and would give formal presentations, conduct workshops or seminars at about 90 of these. Also scheduled were clearinghouse-staffed exhibits at 74 of the meetings.

2. The clearinghouses were to continue their established practice of publishing ERIC articles and journal columns in professional education journals. These were to appear in 110 journals which had a regular circulation of over 575,000 subscribers.

3. The clearinghouses would continue to publish their newsletters which were currently being mailed to over 170,000 educators.

4. Plans called for distributing ERIC information contained in flyers and brochures to over 100,000 researchers, scholars, and practitioners.

5. Orientations were scheduled for over 9,000 users through seminars and workshops (in addition to the activities at professional meetings).

6. Creation and distribution of about 180 information analysis products was authorized. These were to go directly to about 100,000 people and a secondary distribution through microfiche and hard copy reproductions was to reach a large, but exactly not known audience.

7. A four-part set of video tapes was to be produced, about 15 minutes each in length, which used various techniques to explain ERIC and its activities. These were to be used by the clearinghouses, in schools, or possibly TV stations for broadcast.

8. ERIC clearinghouses would continue in various ways (providing computer searches, coordinating programs, etc.) their contacts with about 280 professional associations.[33]

All these activities, though not blatant advertising techniques, would add significantly to the public awareness of ERIC in educational circles.

ERIC Document Reproduction Service (EDRS)

HEW News Release - April 9, 1975

"Anaheim...In the history of the National Microfilm Association only four special awards have been presented for outstanding contributions to micrographics. Tonight at the NMA's 24th Annual Awards Banquet, the fifth special award was presented to the Educational Resources Information Center (ERIC) of the National Institute of Education (NIE), U.S. Department of Health, Education, and Welfare. Accepting the award for ERIC was Charles Hoover, Chief, Information and Communication System Operation, NIE.

"Since its inception by the U.S. Office of Education in the mid-1960's, ERIC has included a major micropublishing program as an essential part of its activities in making unpublished educational materials available to a wide public. ERIC uses a nationwide network of clearinghouses, each specializing in a select area of education to acquire, catalog, index, and

abstract current educational literature. These documents are available as microfiche from a central source, and more than 500 organizations now possess extensive ERIC microfiche collections"[34].

It was an award well merited because EDRS certainly did manufacture microfiche, by the millions, as Figures 27, 28, and 29 illustrate. There were four EDRS contractors which were responsible for the remarkable outpouring of microfiche to ERIC users. Their periods of contractual relationships with ERIC were as follows:

1. November 19, 1965 - December 31, 1967
   Micro Photo Division of Bell and Howell Corporation,
   Cleveland, Ohio
2. January 1, 1968 - February 20, 1971
   Microcard Division of the National Cash Register Company
   Rockville, Maryland
3. February 21, 1971 - June 14, 1974
   LIPCO (Leasco Information Products, Inc.)
   Bethesda, Maryland
4. June 15, 1974 -
   Computer Microfilm International, Corporation
   Arlington, Virginia

The cost of this contract to management, especially in the period since 1971, was not significant, varying between $50,000 and $80,000 per year. This was due to ERIC's contractual obligation to pay only for the microfiche and hard copy reproductions that it purchased itself, such as standing orders for the clearinghouses, the OE and NIE libraries, and on-demand orders for specific reproductions. Thus, EDRS was strictly a business venture which profited from the sale of microfiche and hard copies. The key clause in the contract was the one which obligated ERIC to supply, on an exclusive basis, copies of the input for RIE. However, another very significant clause, which was sometimes painfully negotiated, was the exact price of the microfiche, both for standing orders and individual sale.

ERIC Document Reproduction Service (EDRS)

Microfiche Standing Orders—Growth Statistics

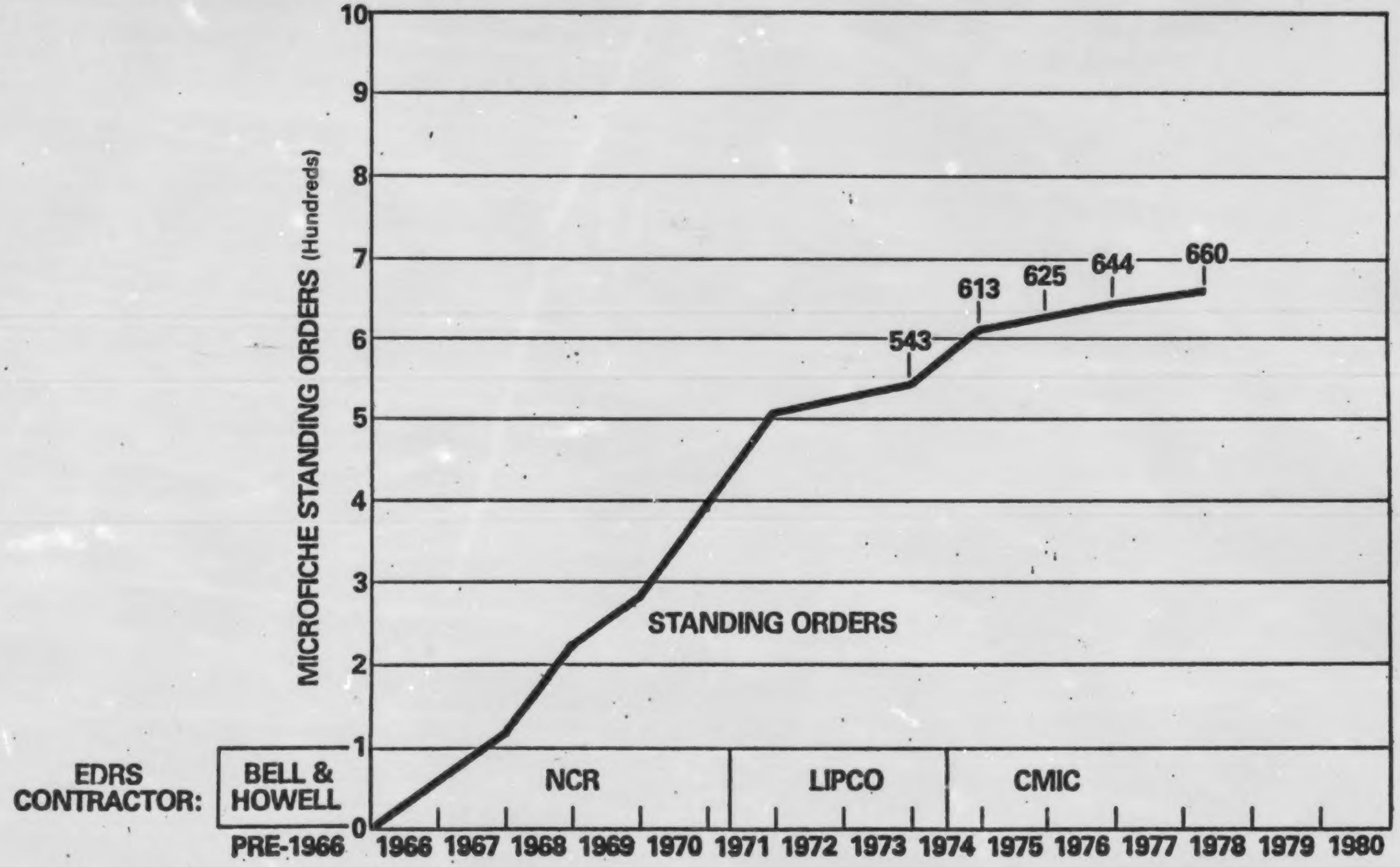

FIGURE 27: EDRS MICROFICHE STANDING ORDERS——GROWTH STATISTICS

ERIC Document Reproduction Statistics

1. Organizations Holding ERIC Microfiche Collections (including 65 foreign)	660
2. Titles Filmed*	
a. Monthly (per RIE issue)	1,200
b. Annually	13,800
3. Microfiche Cards Delivered Per Subscriber (1.4 cards per title)	
a. Monthly (per RIE issue)	1,600
b. Annually	19,000
4. Sales (Annually)	
a. Microfiche Cards on Subscription (including back sets)	15,000,000
b. Microfiche Titles On-Demand	36,000
c. Hard Copy Titles On-Demand	43,000

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*Presently approximately 10% of document input is not available from EDRS because of copyright or other factors and therefore is not filmed.

FIGURE 28: ERIC DOCUMENT REPRODUCTION STATISTICS

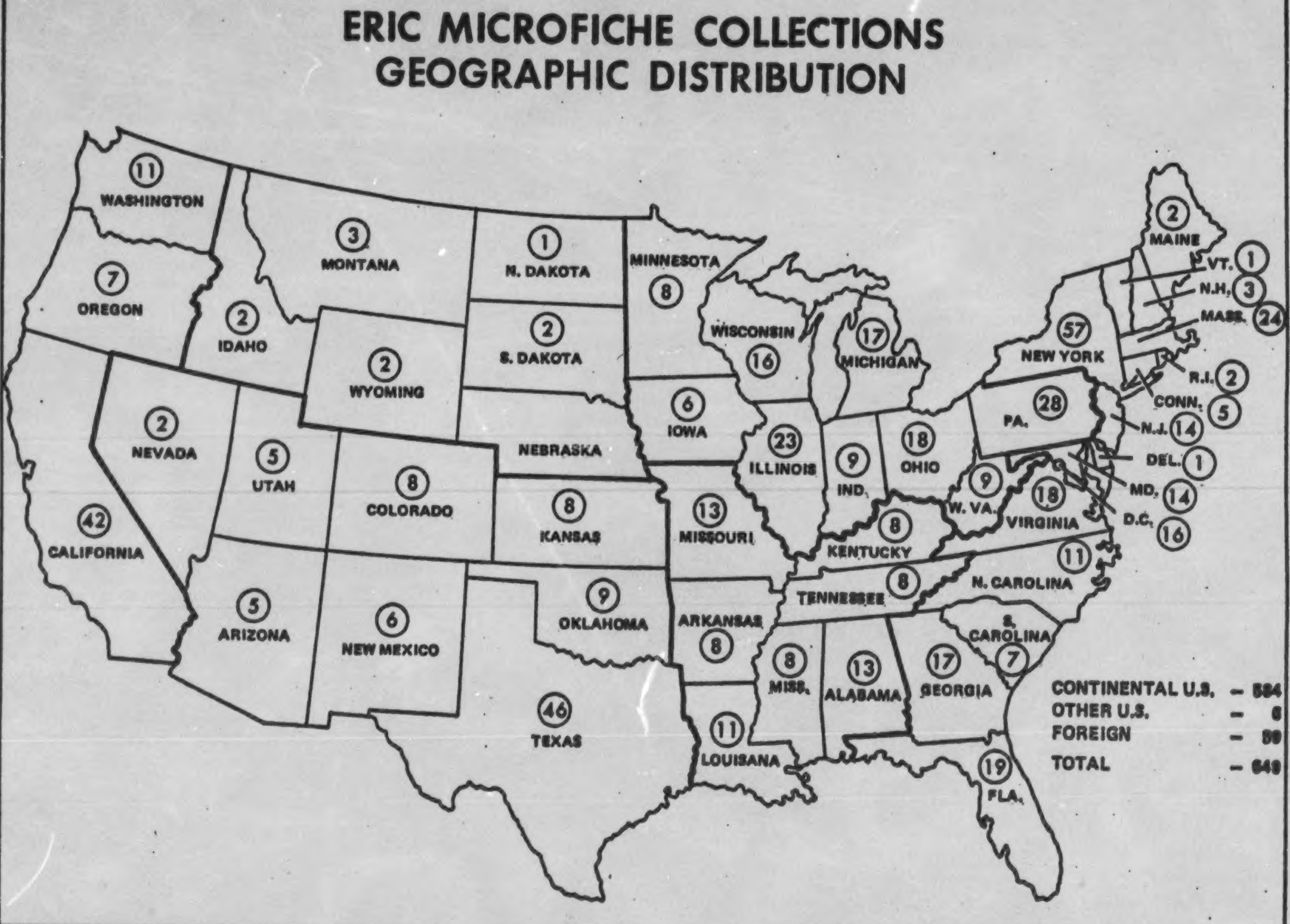
ERIC MICROFICHE COLLECTIONS
GEOGRAPHIC DISTRIBUTION
11 WASHINGTON
7 OREGON
42 CALIFORNIA
2 IDAHO
2 NEVADA
3 MONTANA
2 WYOMING
5 UTAH
5 ARIZONA
8 COLORADO
6 NEW MEXICO
1 N. DAKOTA
2 S. DAKOTA
NEBRASKA
8 KANSAS
9 OKLAHOMA
46 TEXAS
MINNESOTA 8
6 IOWA
13 MISSOURI
ARKANSAS 8
11 LOUISANA
WISCONSIN 16
23 ILLINOIS
17 MICHIGAN
9 IND.
18 OHIO
8 KENTUCKY
TENNESSEE 8
8 MISS.
13 ALABAMA
17 GEORGIA
19 FLA.
S. CAROLINA 7
11 N. CAROLINA
18 VIRGINIA
9 W. VA.
PA. 28
57 NEW YORK
2 MAINE
VT. 1
N.H. 3
MASS. 24
R.I. 2
CONN. 5
N.J. 14
DEL. 1
MD. 14
D.C. 16
CONTINENTAL U.S. – 584
OTHER U.S. – 6
FOREIGN – 59
TOTAL – 649

FIGURE 29: ERIC MICROFICHE COLLECTIONS GEOGRAPHIC DISTRIBUTION

The EDRS contract consumed considerable monitoring time and required the most detailed attention. All new contractors found it very difficult to tool up for the huge volume of microfiche production; all of them found it onerous to meet the turnaround time required in the contract for processing orders; and all of them found it formidable to meet and maintain production quality control.[35] And the contractor could not hide problems of unsatisfactory microfiche or extremely late deliveries, because on frequent occasions those customers would complain to Central ERIC, which would then be obligated to do something. Thus, throughout the years of the EDRS contracts, the contract files in ERIC became loaded with letters of complaints, memos of site visits to the contractors, correspondence to company officials, and frequent references to minor crises of one kind or another. The very nature of the operation made it almost impossible to do a completely perfect job at all times. And frequently the problems did not rest with EDRS. In some cases, a clearinghouse would send a document which was almost impossible to reproduce for use in a microfiche reader. But it would have to be entered in the microfiche file anyway, since the document would already have been announced in RIE.

Following a few normal and expected start-up problems, Computer Microfilm International Corporation (CMIC), when it obtained the contract in mid-1974, had performed the EDRS function in a competent manner, first under the direction of Walt Steele and then Jack N. Veale. These individuals always gave ERIC full cooperation in arriving at solutions to problems or changing production techniques so as to come up with a better product or improved service. The three-year period of the EDRS contract expired in June 1977. However, when CMIC solicited Central ERIC to add two additional years (in concert with the five-year contractual period for ERIC contracts at that time, that is, one-year contracts with four options to renew) ERIC agreed and so did the NIE contracts Office.[36] Then, in 1979, ERIC again had to hold a competition for the contract. For the first time in an EDRS competition, the incumbent won.[37] Thus, pending continued successful performance of the EDRS activity, CMIC would continue to be the EDRS contractor until June 1984.

For the most part, the EDRS story is one about maintaining production schedules, adhering to quality control standards, and improving products and procedures. One interesting anecdote, an unusual aspect of that story, however, is that which resulted in the change to vesicular film from silver halide.

Back in January 1973, Hoover called Burchinal's attention to the fact that

> *"Within recent years the microfilm state-of-the-art has advanced to the point where silver halide film is being seriously challenged by diazo and vesicular type film in both technical performance and cost. To take advantage of the advancing microfilm technology, increasing numbers of microfiche duplicate distributors are examining the cost savings possible by utilizing alternative microfilm types. We in ERIC, being the largest producer of microfilm and also interested in advancing technology and possible savings, would like to identify, examine, and compare the technical cost and user acceptance criteria on which we would make valid decisions for future microfiche production."*

Hoover went on to point out that no one on the ERIC staff was technically qualified to perform such an examination, but he knew of someone to do it: James Prevel, who had formerly worked in OE. with the ERIC program. He was very knowledgeable about microfiche, and also was very familiar with ERIC operations.[38] Burchinal agreed.

Prevel examined the recent microfilm literature, obtained data about the manufacture of various types of film, and visited other organizations involved in microfiche production, including those using vesicular film. His advice, after completion of his study, was that he saw no reason why ERIC should not consider distributing microfiche in vesicular or diazo form. The principal stumbling block in making his recommendation had been an experience which occurred in the General Services Administration, specifically as reported in the technical library literature by Georgia Apostolu: gas emitted from vesicular film corroded metal cabinets and affected cardboard containers stored in the cabinets. Apostolu referenced a federal regulation which required that film giving off gaseous impurities should not be sorted in the same room as permanent record silver films. However, she indicated that the regulation was meant to apply to films which were to be stored in an archival collection, not to films which were used on a continuing basis. Also Apostolu stated that she had not seen any recent evidence of the alleged corrosive properties of vesicular film. After sifting the evidence, therefore, Marron wrote a letter to the NIE contracts office, in anticipation of the upcoming EDRS contract competition, that read:

> *"In summary, NIE staff feels that in view of the advantages that appeared to be associated with non-silver halide film and since no evidence could be found in recent years to support the allegations that vesicular or diazo films will corrode storage cabinets, paper products or silver films, it was decided to allow bids to be received for the manufacture of non-silver distribution microfiche as well as silver."*[34]

In June 1974, Central ERIC felt that it should advise all standing order customers about this decision.

> *"At the outset two points should be made abundantly clear:*
>
> 1. *Those concerned with dissemination in NIE are advocates of neither silver, diazo, nor vesicular films. We are dissemination advocates! In this fast moving world of new products and technologies, rising prices and increasingly complicated delivery systems, we are looking for the best quality/cost mix which will maximize the utilization of educational information,*
> 2. *No matter what film type is chosen, NIE will insist that the applicable quality standards of the National Microfilm Association and the American National Standards Institute he applied to ERIC fiche."*

As for the allegation that a particular type of film emitted corrosive gases:

> *"We are informed by the manufacturers of that film that it has been discontinued and that they are now producing another type which reduces the gas emission to negligible levels. It is important to note, however, that not all vesicular films emit corrosive gases."*

Furthermore, other government organizations, which produced between one and two million microfiche per year were already using non-silver films. Central ERIC further informed the standing order customers that:

> *"...our current data indicate that the new ERIC fiche will be every bit as serviceable as the old. This refers to its readability and reproducibility. On the plus side, however, it will be more resistant to tearing and other surface mars. Finally, since it is about 2/3 the thickness of the former ERIC fiche, in time a space saving will result. We are unaware of any characteristic which will make these new ERIC fiche a less satisfactory product."*

And the new fiche was cheaper. Initially, it was calculated that the new product would save standing order customers about $660 per year.[40]

There was some opposition to ERIC's decision, which came from the library association community. At meetings of the American Library Association, both Hoover and Marron heard critical comments, particularly from Carl M. Spaulding, who advocated the continued use of silver halide, particularly for its long-term archival characteristics. He felt that vesicular and diazo films had not yet reached a satisfactory state of development.[41] The Micropublishing Projects Committee of the American Library Association continued to address itself seeking acceptable standards for the vesicular and diazo films. However, after a few years had passed, the basic concern about the questionable qualities of vesicular and diazo film had largely disappeared. This change was reflected in an article which Spaulding wrote for *American Libraries* which bore the intriguing title: "Kicking the Silver Habit: Confessions of a Former Addict."*

However, ERIC's switch, in 1974, to vesicular film was not without certain problems. For example, it was not an entirely simple matter, until one got the hang of it, to make fiche-to-fiche copies from vesicular microfiche. After he became aware of this problem and had gathered some experience on how to solve it, Chesley issued a how-to-do-it letter to the standing order customers in which he discussed equipment, film, exposure, and procedures for proper processing and achieving good quality in the fiche-to-fiche operation.[42] One footnote to the switch to vesicular film: ERIC knew that some organizations, particularly those who wished to do a large volume of reproduction, those who were concerned about long-term storage, or those who did not trust the new vesicular film, might be willing to pay the premium price for silver halide film. Thus, EDRS continued to sell the silver halide product; the price, however, was approximately twice that of vesicular.[43]

The EDRS contractor, CMIC, did not completely confine its attention to production. Veale and his staff came up with many improvements, most of them too technical or detailed to describe in this short narrative. These improvements advanced the quality and speed of the EDRS function. One of these was particularly intriguing, the so-called "electronic mailbox." Briefly, this was a method by which organizations with computer terminals, using

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*See *American Libraries*, December 1978, pp. 653-665.

SDC's ORBIT tapes, could key in an order for microfiche or hard copy reproduction of a document in RIE. This allowed CMIC to dial up SDC's computer, take the order from their own terminal, and fill the order on an expedited basis. By mid-1979 this was still a low volume technique because it was not widely known and because most of the organizations having terminals also had a complete collection of ERIC microfiche[44]. But as terminal usage increases (and it is increasing rapidly), this could prove to be an excellent ERIC service.

The above brief description of EDRS constitutes a proper finishing point for a description of ERIC. All the background of building the ERIC orgnization, the budgeting, the studies, the new developments, the continuing efforts of the 250 people directly involved in the system all reach their final payoff with the reproduction and distribution of documents from EDRS.

EPILOGUE

By mid-1979, ERIC had become a mature information analysis system. It had become very well known in all educational circles and universally known among researchers and scholars. Perhaps ERIC's greatest challenge for the 1980's lay in an expansion of all its services to educational practitioners. Certainly ERIC managers were well aware of, and very sympathetic with, that challenge. For example, ERIC had begun to experiment with the "practice file", trying to discover the problems of what type and volume of materials to collect, the format, and if indexes and abstracts for them should be included as part of RIE or appear as a separate publication.

Another large arena for ERIC's future was cooperating with and providing assistance to state educational systems. Thus far, ERIC had visited 10 of the states and had helped them with their information storage and retrieval networks. ERIC managers intended to continue this activity. For ERIC was a model. ERIC had already invented the nuts, the bolts, and the structure of an information system in education, and compatibility with the ERIC system could only prove profitable and advantageous to the states. (This was not intended to be the "big brother" approach; it was only a fact of life.)

"Awareness" and "Access" were the key words for ERIC's future. How to make all potential users aware of the materials in ERIC and how to provide the proper access for all of those individuals who learned of the ERIC system and wanted to use it.

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41. Charles W. Hoover, interview, July 25, 1979.

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ERIC CHRONOLOGY

1958, Feb.	Clearinghouse of Studies on Higher Education created in OE with Hatch as Director.
1959, Mar.	First issue of "Reporter" published by Clearinghouse of Studies on Higher Education.
1959	Tauber and Lilley, of Columbia U., began feasibility study for an educational media research information service in OE.
1960, Sept.	Divisional Committee on Research Information Services, headed by Clemens, recommended establishment of an OE-wide information service.
1961	ERIC acronym coined by Schick and Lorenz.
1961, Apr.	Kent, of Western Reserve U., received contract to study concept of an OE information service.
1962, June	Western Reserve U. study published. Recommended creation of ERIC.
1964, May 15	ERIC created as a branch in the Division of Educational Research, with Haswell as first chief.
1965, Jan.	Burchinal became Deputy Director of Division of Educational Research.
1965, Mar.	Last issue of "Reporter" published.
1965, Apr.	Project Fingertip launched in ERIC.
1965, Apr. 15	President Johnson signed Public Law 89-10, the Elementary and Secondary Education Act of 1965.
1965, July 1	The "Ink Reorganization" resulted in ERIC becoming a part of the new Division of Research Training and Dissemination. Burchinal headed the new division.
1965, Sept.	Burchinal established PET Panel, headed by Eller.
1965, Nov. 19	EDRS created, with Bell and Howell as first contractor.
1965, Dec.	RFP announced for creation of ERIC clearinghouses. Proposals due on March 15, 1966.
1966, Mar.	Project Fingertip completed.
1966, Mar. 1	Two "prototype" ERIC clearinghouses established: Clearinghouse on Vocational and Technical Education and the Clearinghouse on Urban School Personnel.

1966, May 9	ERIC Facility created with North American Aviation as the first contractor.
1966, June	ERIC created 10 additional clearinghouses and began operations as a full-fledged system.
1966, June	ERIC published "Thesaurus of ERIC Descriptors, Phase I."
1966, June 27	First directors' meeting.
1966, Oct.	ERIC published "Rules for Thesaurus Preparation."
1966, Nov.	First issue of RIE published.
1967, Jan.	Marron became Chief of ERIC.
1967, June	Second RFP for ERIC clearinghouses resulted in six more clearinghouses being created by June 1, 1967.
1967, July 1	ERIC's full name changed to Educational Resources Information Center.
1967, Dec.	ERIC published first formal edition of "Thesaurus of ERIC Descriptors."
1968, Jan. 1	National Cash Register Company became EDRS contractor.
1969, Jan.	ERIC initiates significant moves toward computer searching of the ERIC data base.
1969, Jan.	Date of first issue of CIJE (actually published several months later).
1969, Mar. 1	North American's ERIC Facility completed move from Los Angeles to Arlington, Va.
1969, Mar.	Contract signed with Crowell, Collier, Macmillan Co. for publication of CIJE.
1969, Aug. 22	OE reorganization created the National Center for Educational Research and Development, which included the Office of Information Dissemination.
1969, Oct. 24	Burchinal named Assistant Commissioner of OID.
1970, Jan. 1	Leasco Systems and Research Corporation became ERIC Facility contractor.
1970, Feb.	Hoover replaced Marron as Chief of ERIC.
1970, May 4	OE reorganization created the National Center for Educational Communication, headed by Burchinal.

1970, Oct. 20	ERIC Management Review Group issued report of findings.
1971, Feb. 21	Leasco Information Products, Inc. became EDRS contractor.
1971, May	ERIC transferred major portion of Federal acquisitions program to ERIC Facility.
1971, Dec. 15	Preliminary copy of RAND Report published. Final version dated January 1972.
1972, Feb. 11	ERIC directors met in Chicago to discuss RAND Report.
1972, Feb. 18	Burchinal and ERIC directors met at Brookings Institution to discuss RAND study.
1972, Mar.	Publication of Fry study of ERIC products and services.
1972, June	President Nixon signed Educational Amendments of 1972, which contained authorization for establishment of NIE.
1972, Aug. 1	NIE became operational; ERIC transferred from OE to NIE.
1972, Nov. 1	Glennan became NIE's first director.
1973, Jan. 5	Burchinal presented extensive briefing on dissemination and ERIC to principal NIE officials.
1973, Feb.	Burchinal left NIE to become head of the Office of Science Information Service at the National Science Foundation.
1973, Mar.	ERIC became part of NIE's Dissemination Task Force.
1973, Apr.	Rosenfeld became new NIE Deputy Director for Dissemination.
1974, June	ERIC announced switch from silver halide to vesicular film for its microfiche collection.
1974, June 15	Computer Microfilm International Corporation became EDRS contractor.
1974, June 18	Raizen became Associate Director of Office of Utilization and Resources.
1974, Oct. 15	Glennan, first director of NIE, resigned.

1975, Apr. 9	ERIC received award from National Microfilm Association "for outstanding contributions to micrographics."
1975, May 27	Hodgkinson became NIE Director.
1977, June	Dissemination Forum held first meeting.
1977, summer	ERIC initiated an accelerated Vocabulary Improvement Program.
1977, Sept. 9	Graham became director of NIE.
1978, July 17	Hoover became Assistant Director for Information Resources and shortly thereafter Chesley replaced Hoover as Chief of ERIC.
1979, Jan.	Oryx Press won competition for publication of CIJE.

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